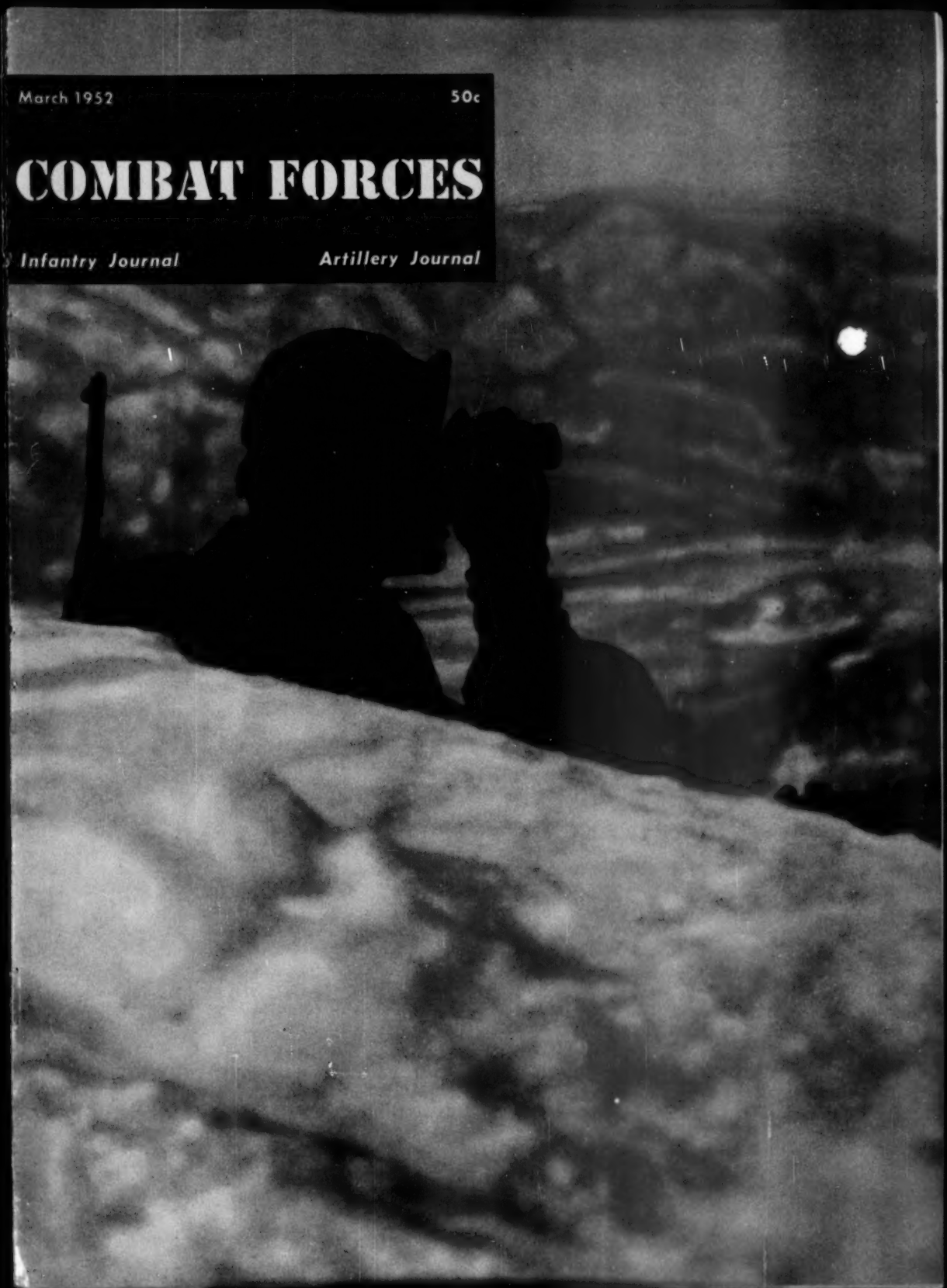
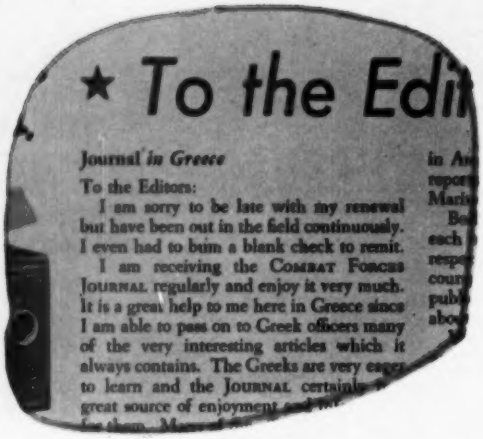
March 1952 50c

COMBAT FORCES

Infantry Journal Artillery Journal




★ To the Edi
Journal in Greece
To the Editors:
I am sorry to be late with my renewal but have been out in the field continuously. I even had to bum a blank check to remit.
I am receiving the COMBAT FORCES JOURNAL regularly and enjoy it very much. It is a great help to me here in Greece since I am able to pass on to Greek officers many of the very interesting articles which it always contains. The Greeks are very eager to learn and the JOURNAL certainly

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UNITED STATES ARMY

COMBAT FORCES Journal

Infantry Journal, 1904-1950 • Field Artillery Journal, 1910-1950

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Vol. 2, No. 8 **March 1952**

COVER: Front-line Snowfield in Korea. *Department of Defense photo by a Signal Corps combat photographer.*

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★ To the Editors . . . ★

Medal of Honor Stories

To the Editors:

When I meet Mr. Albert T. Short (who wrote a letter on why he was giving up his subscription) I would like to shake his hand and talk him out his browned-off mood, to make him soften his long memories of grievances at the Army.

But that's secondary.

I want most of all to see what he wants to see—in the JOURNAL: short histories of each Infantry regiment, and the stories of the men who were awarded the Medal of Honor.

I pinned the list of Medal of Honor winners (from a recent issue of the JOURNAL) on the wall by my desk. When things get tough at the office, I look at that list and figure I'd better get on with my job and keep my mouth shut.

CIVILIAN

Caracas, Venezuela

As Others See Us

To the Editors:

In looking at pictures of enemy prisoners being interrogated, I have often wondered what opinion they have of American soldiers and the quality of our Army. I have never read a word on the subject anywhere, although in view of the opinions we have formed regarding German and Japanese soldiers, their opinions of us ought to be very interesting reading.

A short series of articles regarding German, Japanese, and Chinese opinion of us, might be very interesting.

NILES LOPEZ

6512 Victoria Ave.
Los Angeles 43, Calif.

Dummies—'Chutes & Editors

To the Editors:

In the December issue the article "Fool 'em" refers to the use of dummy parachutes as a deceptive measure. I may have misinterpreted the author but I get the impression Captain Hadley did not know such dummies were used in World War II. Colonel Ed Raff tells me they were used in North Africa, and I know of at least one occasion when they were used in the Pacific. As the Sixth Army invasion fleet passed west of Manila on its way to Lingayen a large number of dummy parachutes and automatic small-arms firing devices were dropped south of Manila to create the impression that the main landings would be in that vicinity. There were probably other instances.

If Captain Hadley knew this my point has no validity. If he did not then I question whether such a statement should be made without at least editorial comment from the JOURNAL.

This same comment applies to other articles as well. Not very often I'll admit but once in a while, an article will make quite a show of something as being entirely new when that same "something" has been in the books for quite a while.

I have been very pleased with the JOURNAL, especially the Korea coverage. I am also glad to see the artillery getting quite extensive coverage too. How about getting the Tactical Air Force to join you too? They must have a magazine and they *are* supposed to be part of the team.

COLONEL DAVID W. GRAY
Army War College
Carlisle Barracks, Pa.

Marine Subscribers

To the Editors:

Why does the JOURNAL accept subscriptions from those seagoing bellhops of the Marine Corps? In almost every issue there is a comment by one of those characters either criticizing the magazine or the Army.

A good example is that letter in the January issue by the Marine sergeant complaining because the artillery wants a combat badge. Pure jealousy. That gyrene would jump at the chance to wear the Combat Infantryman Badge.

I used to think Marine Corps infantry rated the Badge, but I don't any more. They get too much undeserved glory as it is. Nearly every magazine or movie you see has some Marine Corps propaganda in it. Granted their battles were rugged, but so small in number and size when compared to the ones the Army fights.

The COMBAT FORCES JOURNAL is an Army publication and its contents are none of the Marine Corps' business.

WILLIAM E. RENEAU
Ex-dogface

Shreveport, La.

• We welcome Marine Corps subscribers if for no other reason than the chance it gives them to learn about the Army. THE EDITORS.

Combat Pay

To the Editors:

I have followed with deep interest the many letters submitted on the subject of "hazard" pay and would like to add my opinion.

When I re-enlisted in 1949, I was in effect contracting myself, my services and my fortunes to the U.S. Army for a stipulated cash agreement, payable each month in full. In exchange, Uncle Sam agreed to clothe and feed me and let me play with his expensive tools of warfare.

Very likely, I could have continued at this rate until I reached retirement were it not for the Korean fracas. I was trained for combat and had a combat career field MOS and I fully realized that at any time U.S. troops were committed to action, I

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Medal of Honor

Lieutenant Frederick Henry of Clinton, Oklahoma—Medal of Honor for sacrificing himself to save his platoon in combat near Am-Dong, Korea, September 1, 1950. When the platoon could no longer hold its position, Lieutenant Henry ordered the men to pull back. But someone had to stay behind to provide covering fire. He chose to be than man, and was lost.

Always remember this—Lieutenant Henry offered his life for more than just a small platoon in far-away Korea. It was also for America. For you.

Isn't there something you can do when this man did so much? Yes, there is. You can help keep the land he loved solid and strong and secure. You can do a job for defense... by buying U. S. Defense* Bonds, *now!* For your bonds give your country greater strength. And a strong America is your best hope for peace and freedom—just as it was his.

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Remember that when you're buying bonds for national defense, you're also building a personal reserve of cash savings. Remember, too, that if you don't save *regularly*, you generally don't save at all. Money you take home usually is money spent. So sign up today in the Payroll Savings Plan where you work, or the Bond-A-Month Plan where you bank. For your country's security, and your own, buy U. S. Defense Bonds now!

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could be called upon to do what I was being paid and trained to do. That is about the way the contract reads.

If the Air Force *must* receive extra pay for "hazardous" duty, then by all means let a little manna fall on the ground troops as well. However, I would rather see all types of extra pay discontinued at least during the emergency.

M/Sgt. John G. Stepanek
CAS, GHQ, SCAP, APO 500
c/o PM San Francisco, Calif.

* * *

To the Editors:

Hazardous duty pay? Nuts!

Why should a soldier, sailor or airman receive bonus pay for doing what is expected of him? War itself is hazardous. We didn't ask for it. But we got it.

How many airmen sleep in foxholes and eat C-rations, for days, weeks at a time? Few, if any. You say a plane can fail mechanically in the air. Well a soldier's rifle can fail when he needs it most too.

Take away the hazardous duty pay from the flyboys and pay them what they're worth.

Sgt. F. E. Westfall
USMCR
Hq. Co. 1st Tk. Bn.
1st Mar Div. F.M.F.

In Defense of the Bayonet

To the Editors:

I take violent exception to "Museum Piece" in the January issue, which called the bayonet useless.

It was my privilege to command Task Force Bartlett, composed of my own unit, the 64th Heavy Tank Battalion, and the 2d Battalion, 27th Infantry, commanded by Lt. Col. Gordon Murch, 27th Infantry, in Korea in February 1951. During that operation I watched *two* company-sized bayonet attacks by Easy Company, 27th Infantry, supported by tanks of my battalion. The company commander, Captain George Millett, has since been awarded the Medal of Honor for one of these attacks.

Even though a tanker, I am a "son of the Infantry," and I resent the implication that our present-day doughboy doesn't use his bayonet. Let the author, as I do, thank God he uses it very well!!

Col. William G. Bartlett
The Naval War College
Newport, R.I.

'Horses & Helicopters'

To the Editors:

I read with interest the letters to the editors from Captain Bimberg and Colonel Thompson which appeared in your December issue and which commented on your September article "Horses and Helicopters."

In a recent report, Colonel William B. Bunker, Chief, Air Transport Service Division, OC of T, made some comments

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pertinent to the observations of Captain Bimberg and Colonel Thompson.

With reference to Captain Bimberg's observation "that obviously the native carriers have not been replaced by helicopters" (in Korea), the following excerpt from Colonel Bunker's report is pertinent: "Helicopters have been used with significant success in the Korean campaign and commanders of all echelons have been lavish in their praise of the machines. In many instances particularly in logistics where they could have been employed, their unavailability has forced adoption of other less efficient and, in some instances, more expensive expedients, such as human bearers and mule pack trains. . . ."

Colonel Thompson states that "the helicopter depends on weather and is limited to a comparatively low maximum altitude in which it may satisfactorily land and take off." These observations are probably true if reference is made to the relatively small, low-powered helicopters typical of the development period of the past five to eight years. In contrast, however, it should be pointed out that the H-21B which Piasecki is producing for the Army is equipped with an autopilot permitting scheduled operations in any weather and its service ceiling is above the altitudes at which man or beast can operate efficiently without the use of supplementary oxygen.

Colonel Thompson also wrote that the helicopter "offers a remunerative target to enemy small-arms fire." It may be of interest to note that the blade area of a helicopter occupies only about five percent of the disc area. Seventy percent of the blade area is not critical if hit by small-arms fire. The net result is that about one percent of the disc area is vulnerable to small-arms fire.

Action is being taken to protect other vulnerable parts (self-sealing tanks, armorplating, etc.).

Rough terrain, steep hills, mountainsides, heavily wooded areas, ravines—these "quasi-accessible areas" are of no significance to the helicopter transporting military equipment or supplies, for the helicopter does not need to land to effect delivery. Personnel, fragile instruments, heavy field pieces, bulky supplies—all can be lowered without loss or damage at precise locations while the helicopter is hovering above the ground. Casualties, salvageable equipment, and such can be taken aboard the helicopter similarly while it is hovering. The 22-place H-21B can operate out of a take-off clearing about 150 feet in diameter, which can be either smooth or level.

FRANK K. MACMAHON
Military Relations Administration
Piasecki Helicopter Corp.
Morton, Pa.

Bring Back the Horse

To the Editors:

I was very interested in Lieutenant Colonel Polo's, "Battalion CO Mounted," in the December '51 issue.

After considerable thought and discussion we concluded that Colonel Polo really has something. Perhaps we should reappraise the use of the horse in the Army. Maybe we went too far in eliminating him.

MAJOR HOWARD B. MILLER
Instructor Group
Univ. of South Dakota
Vermillion, S.D.

Language Courses

To the Editors:

While attending a meeting of my reserve Ordnance unit recently, I picked up a copy of the September, 1951 JOURNAL and became absorbed in its contents. Please enter my subscription to the JOURNAL. I will forward a check as soon as you confirm the subscription.

An article by a Colonel on the language problem among the allies in the issue caught my attention. The Colonel believes that an article in each issue published in a foreign language will foster a better understanding among the soldiers of a free world. This may be true.

It is definitely true that, as stated by the Colonel, any close military effort between the U.S. and its allies requires close coordination and cooperation with non-English-speaking peoples. The problem is not only real in Korea, it was real in Europe and it will be real in the event of an all-out tussle with Communism.

While interlanguage or a common language may be the proper long-term solution, it will not do for the immediate future. But that does not mean that there is no immediate remedy at hand.

At Columbia University I saw Army officers without a background of language attempting to learn the Slavic languages in a short time. It couldn't be done.

One of the great assets of the United States is the diversity of the lineage of its inhabitants. There are Gabreskis as well as Smiths in the Korean War as there were in World Wars I and II. We have in this country a great number of Americans of Polish and Russian descent as any glance at the Fordham or Notre Dame football teams will show. Why doesn't G1 send the regulars or reservists of those extractions to college to brush up on the language they grew up with?

LT. MIKE BORAWICK
7522½ 24th Ave., N.W.
Seattle 7, Wash.

Decisive Battles

To the Editors:

You invited comment on issues raised by Creasy's *Fifteen Decisive Battles*. So I, civilian subscriber, offer my nickel's worth.

The cited definition of a decisive battle (Creasy attributes it to Hallam) "settles a good many deep questions in pretty summary fashion." As a step toward sharpening this concept I suggest that for a *battle* to be regarded as *decisive* in the above sense, it must be considered in the light of three conditions: (1) the issue must be reasonably balanced when the battle is joined; (2) the defeated side is never able to restore the situation so that the final issue might again come in doubt; and (3) the winning side could not have restored the situation if the battle had gone the other way.

Perhaps one at least of Creasy's battles meets all three conditions and several meet two of them. Citing by number the conditions met, they are here tentatively assigned thus for the battles following: Marathon 1, 3. Syracuse 1, 2, 3. Arbela 2, 3. Metaurus 1, 3. Arminius 1. Chalons 1, 3. Armada 3. Poltava 1, 2. Waterloo 1, 2.

To call Waterloo decisive in the Napoleonic wars, somehow suggests calling Chattanooga or even Five Forks decisive in the War between the States. Leipsic, even Borodino, have a better title. Borodino is distinctive for tactical success betrayed to strategic disaster. World War I furnished the Germans with other examples.

If the Germans had won on the Marne, the Allied situation would hardly have been more desperate than that from which they won military victory in World War II. The Germans came uncomfortably close to winning on both occasions. The Marne might meet condition 1, but hardly 2 or 3. The Battle of Britain meets 1 and 3, but not 2. El Alamein does not meet condition 1. It looks now as though the Germans had really no chance there, and that

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as in the case of Borodino, the German success of Tobruk led to a fatal over-commitment. After Midway the Japanese cause may fairly be regarded as lost, but it is less clear that ours would have been if things had gone the other way.

A simpler concept of decisiveness is suggested, that is a "point of no return," the point after which the issue is no longer in reasonable doubt. The battles would not be quite the same, and again, the point would not necessarily be a battle at all. Decisiveness may be psychological rather than military.

It is thus problematical how far the above selection of decisive battles stands up under historical criticism, aside from philosophic scrutiny. The idea serves to pinpoint and dramatize, but does not look very useful to the serious student of military history. Some modern nations seem to have trouble making even wars decisive, let alone battles. There is one passage at least, in which Creasy spoke a hundred years ago, with the voice of a major prophet:

"Fear, not moderation, is the only effective check on the ambition of such powers as ancient Rome and modern Russia. The amount of that fear depends on the amount of timely vigilance and energy which other states choose to employ against the common enemy of their freedom and national independence."

F. L. WELLS

19 Bowdoin St.
Newton Highlands, Mass.

* * *

To the Editors:

Although it had been quite a long while since I read or last referred to my copy of Creasy's *Fifteen Battles*, upon reading your comment in the December issue the thought seemed to stick in my mind that my copy did include some additional battles. After fretting about the matter for several days I finally dug out my copy. It is *Decisive Battles of the World*, by Edward Shepherd Creasy with a Special Introduction and Supplementary Chapters on the Battles of Gettysburg, Sedan, Santiago and Manila by John Gilmer Speed. The Colonial Press, N.Y. 1899.

Based on Sir Edward's criterion I would not think that either Alamein or Midway would qualify. The Germans always considered the North African Campaign a secondary effort, designed mainly to keep Italy interested. Even if Rommel had won, it would have been indecisive without the defeat of Russia. As the Japanese never had a chance for eventual victory without Axis victory in Europe, I doubt if any battle in the Pacific could be considered decisive. I'll vote for the Marne and the Battle of Britain. Likewise I would like to nominate the German-Russian Campaign of 1942-43. This was Germany's last chance to maintain the offensive. From then on she was doomed to a defensive role and of course ultimate defeat.

COLONEL DG

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COMBAT FORCES Journal

Comment for the Combat Forces

Banners High

HOW fares the Eighth Army? Its communiqués read like this:

JANUARY 3—Heavy fighting continued for ground lost west of Korangpo. Light enemy probe repulsed east of Pukhan River. Advance position lost and two enemy probes repulsed west of Mundung Valley.

JANUARY 31—Enemy probes repulsed west of Pukhan River and south of Konsong. Scattered light patrol contacts with enemy units up to a platoon in strength reported from central and eastern fronts.

The communiqués do not tell the whole story. To the soldier in the lines the "scattered light patrol contacts" are short, bitter fights against enemy small arms, automatic weapons and mortar fire. For the few minutes or few hours they last such actions are as dangerous and as deadly as a tremendous battle for great stakes.

How fares the Eighth Army?

Let a regimental commander tell us (in a personal letter to Lietutenant General Edward M. Almond):

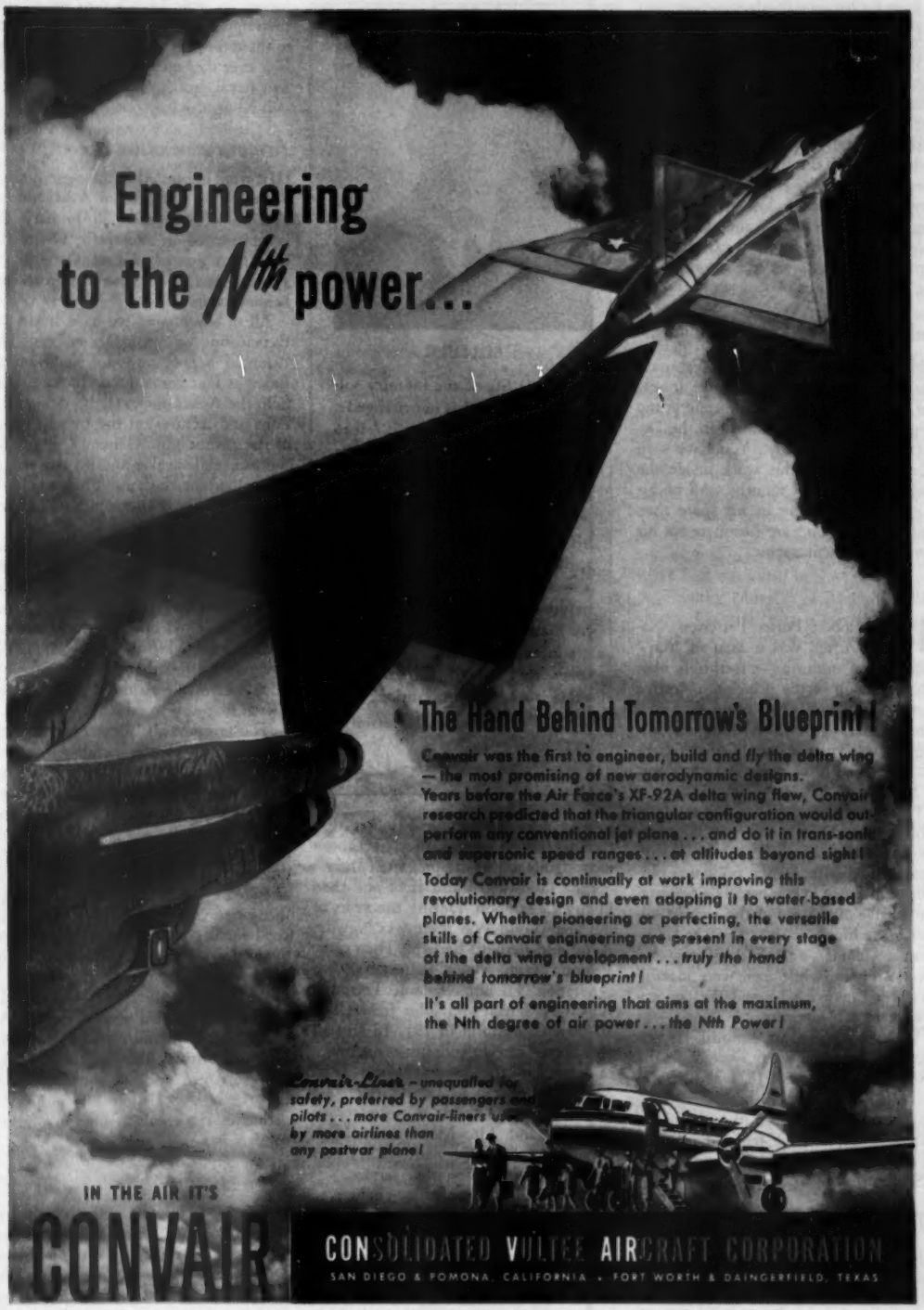
> The Eighth Army has weathered the cease fire delays in excellent condition. I note no reluctance to close with the enemy on the part of my men. I watch carefully for this because I know we all hoped for a negotiated peace even though realistically we didn't believe it to be possible. At any rate, I feel the Eighth Army has accommodated itself to rotation and cease fire and simultaneously maintained its combat aggressiveness.
>
> In spite of these minor handicaps the average soldier has developed a moral superiority over the Chinese Communists and truly believes that his unit cannot be defeated. I too believe that.

The Eighth Army fares well!

Purpose Clear

THE "moral superiority" of the individual Eighth Army soldier to which that regimental commander referred is of tremendous significance in Korea and everywhere in the free world (and in the slave world, too!). Eighth Army has a purpose. It has not forgotten these words of General Ridgway's:

> . . . this has long since ceased to be a fight for the freedom of our Korean allies alone, and for their national survival. It has become, and it continues to be, a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fight for our own freedom and our own survival, for our own honorable, independent national existence.

When we hear the dissensions that sometimes tear us apart here at home, when we hear rantings about unproductive truce talks and false armistices—we wish the loud dissenters could spend a little time with the Eighth Army. There they might regain the sense of values they seem to have lost. There they might remember that "our own honorable, independent national existence" is a precious thing, won and sustained by the blood and guts of Americans.

February Cover

THAT striking cover on our February issue aroused much comment. It was the work of Gil Walker, a former Army sergeant, now a civilian artist in the Department of the Army. You have seen other examples of his work inside the magazine in recent months. All of his work for us is done in his spare time and we (and you) are fortunate for his interest in our magazine.

Soldier

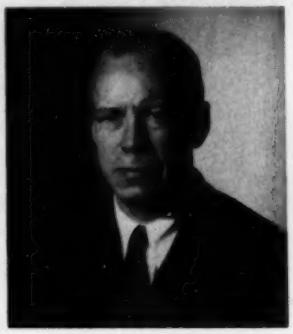
MAJOR Robert Porter Patterson, National Army, was a man of iron—solid, strong, enduring—a forthright man whose pursuit of the principal objective was never-ending. He, more than any other public figure in Washington during the war years, exemplified the sacrifices that had to be made if victory was to be won.

Of all the places, civilian and military, which he held in a lifetime of many responsibilities, the job that he always remembered with deepest pride was captain of infantry in combat. His personal knowledge of the life of the combat soldier made him give short shrift to "business as usual" or the comforts and niceties of life while men were making sacrifices that were beyond the conception of most Americans.

Whether dressed in the dull, lawyer-like suits he customarily wore or in the uniform he wore in 1918, when he was decorated with the Distinguished Service Cross for his heroism in covering the retreat of a patrol he had led into the German lines, he was ever and always a Soldier.

Mighty Host

THE death of Major Patterson removed another stalwart from that small host of mighty men who contributed in their day so greatly to our military and naval services in war and peace. They go back to Alexander Hamilton and Robert Morris but, it seems to us, they have been most significant in the present century.



SOLDIER

. . . the life of the infantry soldier in the field has not changed a great deal. In both wars it fell to his lot to carry a heavy pack mile after mile, with a ten-minute rest in the hour; to keep off hunger with the canned rations he had on his back (when he had them); to spend a long night in the rain in a wet foxhole; to jump off just before dawn; and not to feel sorry for himself in spite of it all. When the infantry soldier begins to feel sorry for himself, his fighting value is a losing proposition.

Robert P. Patterson

25 October 1945

First there was Elihu Root and then Henry L. Stimson. During the years of the first World War there was Newton Baker and Bernard Baruch. Then came a group from Major Patterson's own generation. He himself, James Forrestal, Robert A. Lovett and John J. McCloy, all were in uniform in 1917-18 and all ably helped direct the destinies of American arms in the second World War. Mr. Forrestal and Major Patterson are dead but Mr. Lovett, as Secretary of Defense, and Mr. McCloy, as High Commissioner to Germany, still report daily for duty in the public service.

The contributions of these civilians to the military and naval services are lasting. What they have done and are doing influence the life and professional career of every soldier and sailor.

The services are fortunate to have had the assistance of these able selfless men. Fortunately, also, men whose names are little known now are serving their apprenticeship and will in time rise to the top. The breed is small but virile. If it ever dies out, not only the military and naval services but the nation itself will be on the way out, too.

Armor Association Meeting

WE were interested in the annual meeting of the U.S. Armor Association at Fort Knox, Kentucky, in January, for it represented an attempt by one of the strictly combat arms associations to get a larger part of its membership to participate in its affairs.

All of the reports we have heard say the meeting was a distinct success. The Armored School and the Field Forces Board at Fort Knox did all they could to help the Association, staging demonstrations and lectures on the present status of the Armor arm. General Collins was the principal speaker and his talk was of first importance because it helped clarify the place of armor in the ground fighting team.

Because the members of the several combat arms associations are as widely scattered as the Army itself, it is difficult for many of them to get together. And so the principal effort of these associations is reflected in their magazines. We have always felt that much more could be done and the Armor Association has shown one way to do it.

The several associations of the technical branches of the Army—Ordnance, Quartermaster, Engineers, and others—do not have the same type of membership. They direct their principal effort at their industrial and professional members who are not in uniform. Consequently their annual meetings are largely attended by civilian members (including many reserve officers) which is all to the good for it gives the Army an excellent opportunity to tell its story to an important audience.

We salute Lieutenant General W. D. Crittenberger, the President of the Armor Association, and Major William H. Bell, its Secretary-Treasurer, the officials at Fort Knox, and the membership of the Armor Association for joining together in the common interest of their combat arm.

Correction

CAPTAIN Harold G. Smith pulled us up short on a couple of errors we made in our November issue, both concerning Lieutenant General Edward M. Almond. We said General Almond was a corps commander during the Second World War. As Captain Smith reminds

'Our Lt Is Number One with Us'

To the Editors:

The Ole Man sat down one night on Hill 793 up near the Punch Bowl and while sweating out a probe made a few notes and stuck them in his pocket. Yesterday our adopted Korean house boy brought the paper to me as he was going to wash the clothes. The notes were on the reverse side of the map we were using so it was simple to identify whose work it was.

I have tried to type what was written on the map, but it was rather blurred due to the dirt and rain of the past few weeks, but I believe I have the idea he tried to express.

His love and concern for this company down to the newest replacement is only exceeded by our respect and admiration for him. His ability has been the subject of discussion by his superiors and commendations have been awarded him.

Perhaps if all the First Johns in the Army had a little of his ability and desire to do a little better work for their men, the service and the war this Army would be a better place for us all.

Perhaps his leadership stems from his twelve years of service, perhaps it was acquired with the Airborne troops he had in the last war or family background of which I know nothing. All I know is that as a Sergeant in this outfit, I say we need more of it all over the Army.

Our Lt is Number One with us.

SERGEANT C. ROTHENBERG

5 Sept 1951
Co. A, 23d Inf Regt
Korea

SOME say there isn't much to say about a Rifle Company; that it's not the place to get caught dead in; that there are other branches one can do better in. But listen to me for a minute if you have the time.

When you get 165 men together with a common goal and, who, when the chips are down, do a job, you can be proud indeed.

The kids that came to you twenty-four hours before as replacements are now men and members of the team.

There's a farmer from Dakota, Dan the Highline man from Arizona, Sgt Nick the Plt Ldr, a Cpl two weeks ago, now as good as Benning's Best. The new lieutenant from New Orleans forty pounds overweight two months ago, now lean and rugged, worshipped by his men and the proud wearer of idiot sticks. They are not all country boys. We have a Chicago executive worth a cool million.

The real pride and joy of this outfit is not the kid who just received his second Silver Star, but a seventeen year old kid scared as hell of his own shadow. It took a little extra time, maybe a little babying, but today he is ass't sqd ldr. It is just as important to help a man find himself as the enemy.

Hot pastry on the line, sure. Carried five thousand yards, north and up on the backs of cooks. Complain? Never! It was their own idea, even traded their beer for the ingredients. Yes, even the cooks are different in a rifle company. Most of them have rotated from the platoons to the kitchen after serving their hitch as machine gunners, BAR men, scouts and riflemen. We can do without a mess steward here, at least the MOS.

Something has been acquired here in Korea that you can't get at Benning, the Leaders' School, or Basic Training: Fear, respect, and satisfaction in a job well done.

Who am I?

I am indeed fortunate. I'm a Rifle Company commander, the CO of 165 men.

The editorial pencil has barely touched either Sergeant Rothenberg's letter or the proud paean of his unnamed company commander. To have smoothed the prose would have been to ruin the outpourings of deep and sincere spirits.—THE EDITORS.

us, General Almond commanded the 92d Infantry Division in Italy during its entire period of combat. We also had General Almond's middle initial as "N" when it should have been "M". We apologize to General Almond, Captain Smith and all of our other readers.

Small Arms and Such

In his letter (*page 2*) Colonel David W. Gray challenges us to keep on the ball and in "Shrapnel, Semantics and Such" (*page 29*) Major General W. H. Blakeley challenges us and others to use military terms accurately. We appreciate both suggestions and the good intentions behind them. But—and not as an alibi but for the record—do you ever wonder at the difficulties of an editor not only in keeping his own mind straight but in putting straight the thoughts and facts of such a mixed lot of authors as we take pride in presenting to you month after month? It's quite a job. For example:

In "Small Arms Combat Requirements" (*page 25*) Colonel Seth R. Seitz tells us how one Major Ferguson of the Red Coats was killed by the fine shooting of Timothy Murphy of Morgan's Rifle Corps. Colonel Seitz places the demise of Major Ferguson at Saratoga and says that there is a marker on the battlefield that tells about it. But our history books say that it happened at the battle of King's Mountain in South Carolina.

What about this, we asked Colonel Seitz. I don't know anything about King's Mountain, he replied, but I've been up to Saratoga and seen the marker. What should we editors do? If we rely on Colonel Seitz we will get letters saying it happened at King's Mountain, you dummies, and if we change it to King's Mountain we'll get letters saying that it was at Saratoga and why doesn't Seitz get his facts straight? To see what we did read the article. And in doing so you'll get some pertinent information on some of the technical problems involved in small arms' design, a subject of some interest at this time.

Colonel Seitz does a good job, we think, in showing how technical needs and technical realities create problems that are not easy to solve. No one solution is going to satisfy everyone. His ideas on the kind of small-arms weapons we need are well worth considering.

Help for Ghost Writers

IT is considered neither proper nor safe these days for a general to tell off his civilian critics. But if there happens to be one whose rashness is equal to his bravery we commend to his ghost writer

SOLDIERS

These are the names of twelve soldiers who were honored with the Medal of Honor for performing acts of heroism above and beyond the call of duty in Korea

SECOND LIEUTENANT DARWIN K. KYLE
Company K, 7th Infantry
(Posthumous)

SERGEANT FIRST CLASS JUNIOR D. EDWARDS
Company E, 23d Infantry
(Posthumous)

SERGEANT CHARLES R. LONG
Company M, 38th Infantry
(Posthumous)

FIRST LIEUTENANT ROBERT M. McGOVERN
Company A, 5th Cavalry
(Posthumous)

PRIVATE FIRST CLASS JACK G. HANSON
Company F, 31st Infantry
(Posthumous)

PRIVATE FIRST CLASS EMORY L. BENNETT
Company B, 15th Infantry
(Posthumous)

SERGEANT FIRST CLASS DONALD R. MOYER
Company E, 35th Infantry
(Posthumous)

FIRST LIEUTENANT LEE R. HARTELL
Battery A, 15th Field Artillery Battalion
(Posthumous)

SERGEANT WILLIAM S. SITMAN
Company M, 23d Infantry
(Posthumous)

MASTER SERGEANT HUBERT L. LEE
Company I, 23d Infantry

SERGEANT FIRST CLASS JOSEPH C. RODRIGUEZ
Company F, 17th Infantry

CORPORAL CLAIR GOODBLOOD
Company D, 7th Infantry

The names of twenty-eight other soldiers of the Korean conflict who received the Medal of Honor were published in the November 1951 issue of this magazine.

the following remarks of Lucius Aemilius Paulus, addressed to an assembly of Romans.

"In every circle, and, truly, at every table, there are people who lead armies into Macedonia; who know where the camp ought to be placed; what posts ought to be occupied by troops; when and through what pass that territory should be entered; where magazines should be formed; how provisions should be conveyed by land and sea; and when it is proper to engage the enemy, when to lie quiet.

"And they not only determine what is best to be done, but if any thing is done in any other manner than what they have pointed out, they arraign the consul, as if he were on trial before them.

"These are great impediments to those, who have the management of affairs; for, every one cannot encounter injurious reports with the same constancy and firmness of mind as Fabius did, who chose to let his own ability be questioned through the folly of the people, rather than to mismanage the public business with a high reputation.

"I am not one of those who thinks that commanders ought at no time to receive advice; on the contrary, I should deem that man more proud than wise, who regulated every proceeding by the standard of his own single judgment.

"What then is my opinion?

"That commanders should be counselled, chiefly, by persons of known talent; by those who have made the art of war their particular study, and whose knowledge is derived from experience; from those who are present at the scene of action, who see the country, who see the enemy; who see the advantages that occasions offer, and who, like people embarked in the same ship, are sharers of the danger.

"If, therefore, any one thinks himself qualified to give advice respecting the war which I am to conduct, which may prove advantageous to the public, let him not refuse his assistance to the state, but let him come with me into Macedonia.

"He shall be furnished with a ship, a horse, a tent; even his travelling charges shall be defrayed.

"But if he thinks this too much trouble, and prefers the repose of a city life to the toils of war, let him not, on land, assume the office of a pilot.

"The city, in itself, furnishes abundance of topics for conversation; let it confine its passion for talking within its own precincts, and rest assured that we shall pay no attention to any councils but such as shall be framed within our camp."

Infantry

the infantry and less on infantry itself. Every additional service and support the infantry is furnished is obtainable only at the expense of infantry strength. As more and better forms of assistance to infantry have been devised we have compensated for the percentage decrease in infantry strength by making the whole army larger. But there is an end to that somewhere and the practical limit to those increases may already be here.

In the Second World War, our infantry was in combat for excessively long periods of time. This caused excessive wear and tear—check the casualties, both battle and neuropsychiatric—and loss of morale and efficiency. There have been many suggested remedies for this. All of them recommending less infantry and more supporting forces. One officer advanced the theory that less infantry would reduce casualties because there would be fewer men in position to be killed. A study of school examples of tactics shows a sizable increase in the base of fire, or pivot of maneuver elements and a corresponding decrease in the size of the maneuvering force. Tables of organization reflect this tactical concept—this desire to assist the infantryman, *but not to join him.*

What the infantryman badly needs is more infantry.

HOW can more infantry be obtained? The logical method would be to carefully re-examine our whole organizational structure and take out all functions, equipment, and men not absolutely needed. But this would never be done. Too many persons would be involved: too many who would be branch conscious, unwilling or unable to see the necessity for change, or just incapable of saying "No." There would be a lot of "horse trading" but not much economy.

The only method which might produce results would be to redesign the whole army, write a new table of organization for the infantry squad, and then progress through all subsequent organizations keeping each one to an absolute minimum, strong enough to discharge its mission, but no stronger. It would take years to do the job properly, testing it as it developed. But we don't have the years. Infantry is disappearing too rapidly.

The solution is drastic and arbitrary action. Every organization behind the infantry battalion should be cut, using a progressive percentage, following the following formula.

(1) Remove all fillers from units behind the infantry battalion.
(2) Reduce all units of the infantry division (less infantry regiments and division tank battalions) by five percent.
(3) Reduce all other troops attached or assigned to a corps (less above) by ten percent.
(4) Reduce all other troops (Army, COMZ and ZI) by fifteen percent.

The reduction in items 3 and 4 would generally be on a branch basis, rather than a unit basis, so as to reduce relative overhead.

On the basis of a 60,000-man division slice, this would net about 7,500 men, enough to make *two more infantry regiments* for each division of the Army. That is a 66⅔ percent increase in infantry strength.

Can it be achieved?

OF course it can. But to put it into effect will take someone with ice water in his veins, and the ability to listen to all sorts of tearful pleas and still say "No." He will have to be a hardboiled cynic who can say, "Do it or I'll find someone who will." The reaction of the services will be violent, but then, so is combat violent for the infantryman.

What will be the effect on those organizations which are cut?

They will just have to work a little harder, and a little longer. Someone will have to work harder if we hope to compete with other armies. The infantry can't do much more, so others must. These cuts will not hurt as much as the degree would indicate, because of our policy of hiring civilians in rear areas. This may encourage the services to point out to the combat arms that some of their functions are not absolutely necessary and that perhaps the combat arms could do without them. Maybe if the work in rear areas gets too hard we'll have an excess of volunteers for the infantry. I want to be around on that day!

What are we going to do with all this extra infantry? How are we going to organize, train and use it?

ORGANIZE it in regiments. More divisions would only require more support and the end result would be that we'd gain only overhead. Train it exactly as other regiments are trained. *Attach* five regiments of infantry to each division for training, and move all five to the theater of operations with the division. No infantry regiment would be permanently assigned to a division. This would, of course, violate the integrity of the division, but then this plan violates everything—everything, that is, but the rifle company—so division commanders and their staffs will have to become as flexible in their thinking as corps commanders. Many will say that this will destroy the morale of the division. I say it will boost the morale of every infantryman, and high morale in five regiments of infantry should certainly carry the rest of the division along. If the five regiments can't, then I can't see how three regiments, usually pretty well worn and torn, can be expected to do it. High morale on the division staff is never a substitute for high morale, strength and vitality in infantry regiments.

Combat will be the test. At this point we'd need some more of the same breed who made the cut—to command each field army and to enforce the new system until each division and corps com-

mander saw its advantages. Simply stated, the method of operation would be:

(1) Each infantry division would always have three regiments attached to it, never more.

(2) The twenty-four extra regiments in a field army would be *physically* located, approximately six in each corps zone and six in the army zone.

(3) A corps commander could use his six regiments as a pool from which to exchange a fresh regiment for a tried one. He could change them in any manner he desired, so long as he always held six out of combat and behind the division rear boundaries. In the event of an emergency breakthrough he could commit all of them—if the enemy crossed his division rear boundary.

(4) The army commander alone could authorize the use of any of these twenty-four regiments so as to "load" several divisions or a corps for a real offensive, a breakthrough or other special operation. An army commander would be *morally responsible* to abide by the *spirit* of the system. The extra strength is to provide more power and not to increase division frontages.

BUT will this tie the hands of division commanders? Usurp their prerogatives? Destroy their initiatives?

It will not. Division commanders will have the same amount of infantry they have had in the past, except that it will be much fresher and consequently more powerful. The opportunities for sustaining an attack will be almost unlimited. Fresh regiments could be lined up behind an attacking division so as to permit passing a new regiment through, *before* the old one begins to stumble, thus permitting an acceleration of the attack, and allowing the enemy neither relief, nor opportunity to gather for a counterattack. Every attack could be an all-out affair. The infantryman would not have to husband his strength so as to have something left for tomorrow, and the next day, and the next and then for a counterattack—and then all over again. Attacks could be speeded up—and it is speed which prevents an enemy from adequately reinforcing, and effectively counterattacking. An army being pushed to the rear seldom turns to the defensive until its opponent stops to draw breath, and it never counterattacks until after it has stopped its rearward movement.

When the enemy pentrates our force, and he will, somewhere, sometime, he will no longer find a *thin* crust which will be the only thing between him and and the sea. Twenty-four infantry regiments disposed in depth through the corps and army zone will tremendously increase the depth of the defense. These extra regiments will be rallying points for service units, and will absorb the enemy's last ounce of strength.

WHAT do these regiments do when they are not attached to divisions?

There are a number of rear-area functions which can be discharged by infantry as well as any one else, jobs on which the infantry regiment can get a much needed rest, clean up, overhaul its vehicles and equipment, absorb its replacements, allow the soldier to live in a somewhat normal and regular way for a while, and do some necessary retraining. This is not "made work," nor is it a so-called rest camp or recreation center. Corps and army headquarters must have security forces. Lines of communication and supply depots must be guarded. Prisoners of war must be secured, rear areas controlled, supplies transported and replacements handled. In World War II, in Europe, the personnel required to perform many of these functions were obtained by overstrengths (stolen from the replacement stream), diverted AAA units, units diverted from front-line divisions, truck companies, and MP units.

An infantry regiment would provide a better form of internal security than any other unit. The troop basis would be out in the open and there would be no excuse for padding units, and stealing men. In most cases, replacements could go direct to regiments while they were in a rear area, saving the soldier the heartbreak of a "repple depple," conserving discipline, and assuring his proper orientation *before* entering combat. The requirement for third and fourth echelon repair would be reduced because the infantry regiments could thoroughly overhaul weapons, equipment and vehicles during this period. Fewer truck companies would be needed because each regiment could furnish at least one truck company to the corps or army.

All of these activities are a form of training, and all would be a rest and relief from combat. During these periods of rear-area duty there will also be ample opportunity for tactical training, and the careful assimilation of replacements under the best possible conditions.

The regiment will gain strength during this time, and will go back into combat with renewed physical vigor, better equipment, and higher morale.

Some will say: But this makes labor troops of the infantry. Well, they labor up front and dodge bullets and sleep in the mud, at the same time.

Others will say: The solution is not this simple... there are complications...

Perhaps so, but the complications are all in the minds of those who are now basking in the luxury of *status quo*. There are none in the minds of the infantry soldier; he'll be out of combat two out of every five months.

It is true that such arbitrary methods as this are to be deplored, and are absolutely contrary to our present adherence to "Command by Concurrence."

But it will produce more infantry at once.

Atomic Projectiles for Artillery

IN the immediate post-Hiroshima days atomic weapons were heralded as "absolute" and ground warfare was called obsolescent. Soldiers who, nevertheless, insisted that for every weapon there was some counter weapon or measure and that every promised revolution in warfare had fizzled out, leaving the combat soldier on the ground to finish the dirty job, were hooted and called reactionary fossils.

In time fear and awe were replaced by a wholesome respect for the power of atomic weapons and a better understanding of their capabilities. So it turned out that in less than five years after Hiroshima, a foot soldier—General J. Lawton Collins—could tell a television audience that "it is by no means impossible to develop an artillery piece that would fire an atomic weapon"—and have the statement accepted as a desirable development.

By December 1951, General Collins could further report that atomic projectiles for artillery were "not in the too distant future," conscious that there would probably be critics who would retort, "About time; why have you been so slow?"

In his discussion of atomic projectiles for artillery, General Collins tried to give perspective to this new development. It would not, he said, "revolutionize warfare." Instead, it seemed safe to observe, artillery is simply following its long-time trend of increasing its fire power and flexibility. Artillery which already has great diversity will have a weapon in the atomic projectile that will increase its range and destructive capabilities. What the full effect of atomic projectiles will be on artillery (and army) organization and tactics cannot now be said with any degree of authority."

WHAT kind of weapon will be used to fire the atomic projectile? In his statement, General Collins said that the weapon "has been tested," adding that he did not "mean it has been tested as an atomic weapon. It doesn't have to be." We can assume from this that an artillery piece capable of firing atomic projectiles will also be capable of firing other types of projectiles. Its size is, of course, a secret. It will doubtlessly be capable of ranges equal or superior to the ranges of our present heaviest artillery.

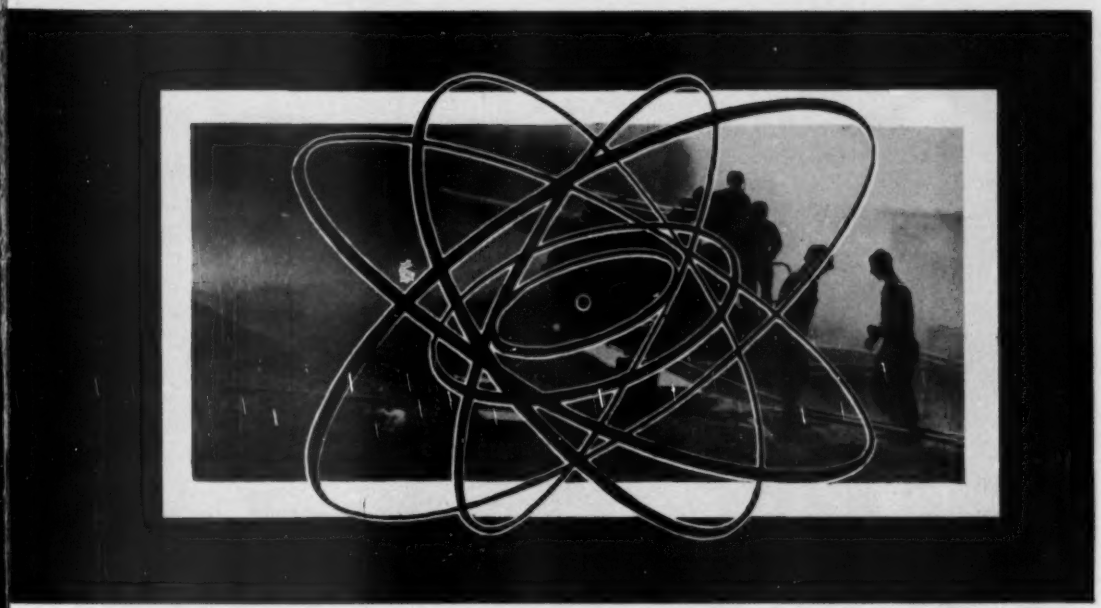
Certainly the destructive capabilities of the atomic projectile will be great. Suppose the projectile has a magnitude of energy of twenty kilotons, equal, that is, to 20,000 tons of TNT. This size is what the official report, *The Effects of Atomic Weapons*, calls a "nominal weapon," and is about the size of the Hiroshima bomb. Twenty thousand tons of TNT is a lot of fire power. How many battalions of 105mm howitzers would it take to dump a TOT of equivalent energy on a target?

The weight of the explosive charge of a 105mm M1 projectile is given as 4.8 pounds. If we multiply 4.8 times the number of guns in a battalion we get (18 x 4.8) 86.4 lbs. per battalion. Now divide 86.4 into 2,000 to get the number of battalions required to fire a ton of explosive. That's 231.4 battalions. Now multiply this by 20,000 to get the number of battalions required to equal the energy of the 20 kiloton bomb. This comes to 4,628,000 battalions.

It may be that the atomic projectile fired from an artillery piece will not be as powerful as that. We don't know. But suppose it is only one-half or even one-tenth as powerful; still a lot of fire power!

What kind of targets would be profitable for atomic projectiles? General Collins stated that massed ground troops would be one possible target. Others suggest themselves: massed tanks or artillery, heavy fortifications. Probably atomic projectiles could not be profitably used against all targets normally engaged by heavy and very heavy artillery. While it might pay to use one of the projectiles to destroy an important enemy-controlled bridge, it might not be any better than conventional explosives for other interdiction targets. In counterbattery fire, for example, the atomic projectile might be used if the enemy's artillery is poorly dispersed over terrain that would permit the blast to take full toll. Much will depend upon the situation.

Commanders equipped with a knowledge of what their



various artillery weapons—including atomic—can and can't do will certainly be able to determine when an atomic projectile should be used. The principle of the objective holds as true here as elsewhere.

The commander's intelligence will have to be of the best. Targets will have to be carefully selected and pinned down. Information about enemy troops, weapons and supplies will have to be passed rapidly to commanders who have the power to order atomic projectiles to be used.

GENERAL Collins said that atomic projectiles will "greatly enhance the power of the defense and . . . [have] great merit and great worth to us, because the business of our operations in future war will almost certainly be on the defensive initially and, in my opinion, these weapons are of greater value to the defense than they are to the offense."

Obviously the threat of atomic attack—whether from aircraft or artillery—will make dispersion of armies essential. Another invasion of the continent of Europe in the 1944 pattern is unthinkable. The Chinese Communist tactics of attacking with "human waves" of infantry failed when used against our conventional fire power in Korea. Its use against a force that had artillery capable of firing atomic projectiles would be suicidal.

Greater dispersion will increase the problems of control and coordination and will affect tactics. Communications will be of first importance. So will training and the instilling in small units of the initiative to carry on the fight without encouragement or prodding from on high.

Why go to the expense of developing atomic artillery when air power is quite capable of doing any job the artillery can do? Artillery has certain obvious advantages over air power in the tactical use of atomic weapons. It is more accurate. It can fire around the clock and in all kinds of weather. It is a weapon organic to Army combat organizations and requires no complex and time-consuming system of coordination and request. Artillery could fire a mission within the time a request for an air strike was being routed through control centers and commanders. There should be no "feud" here. The two methods of delivering atomic weapons are complementary rather than competitive. It is no more sensible to say that artillery shouldn't have atomic projectiles because air power can carry them, than it would be to say that the Army should disband all of its antiaircraft artillery because air power has interceptor planes designed to shoot down enemy aircraft.

IN his statement General Collins spoke of the effect atomic projectiles will have on artillery, and he mentioned guided missiles.

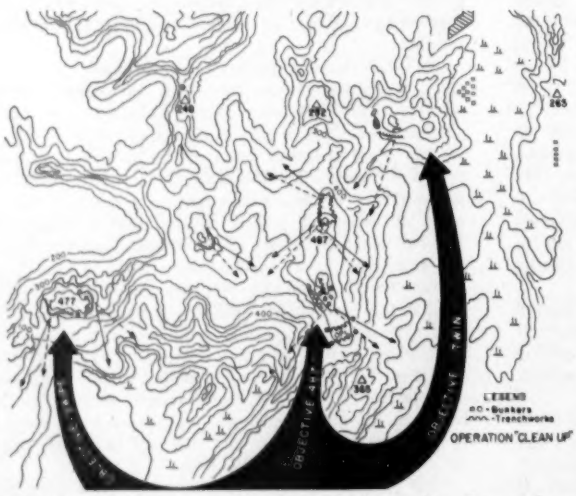
"So far as Army programming is concerned," he said, "in our new development we are taking into constant thought whether or not these weapons can be used to carry fissionable materials. Now if they prove competent to do this, we are not going to simply superimpose them on our current lineup of troops, but, for example, if we have a guided missile battalion—which we have now, as a matter of fact, capable of delivering guided missiles against aircraft—that battalion will replace one of the standard antiaircraft artillery battalions. As we increase the number of guided missile antiaircraft battalions, they will displace conventional battalions of antiaircraft artillery. A similar thing would hold with respect to ground-to-ground guided missiles. We are working in that field also. As we get practicable weapons, these battalions—ground-to-ground missile battalions—will displace or replace an equal number of heavy artillery battalions. In other words, this program we are working on is an integrated program and will not be merely superimposed on our current troop basis."

That is clear enough. The Army may have more than one weapon capable of firing atomic projectiles. Guided missiles are making progress and may, in time, replace at least some conventional artillery.

In one form or another artillery is here to stay.

Communist-entrenched Hill 487 after Eighth Army took it. Emplacements and bunkers were connected by trenches.

Fortified Hill—Communist Style

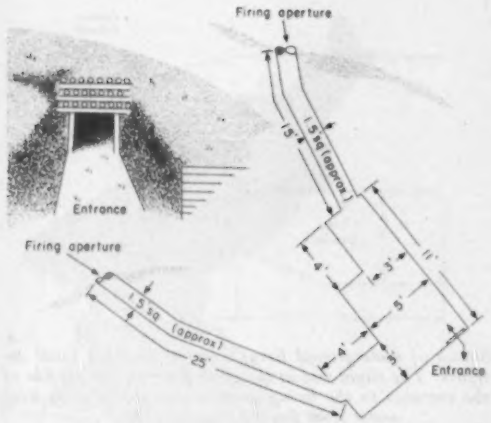


The plan called for an attack on Hill 487 by two battalions and on the Twin Peaks east of Hill 292 with one battalion. Hill 477 would be assaulted by two battalions as soon as 487 was secured.

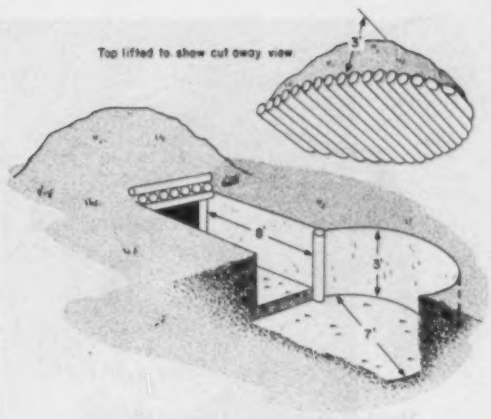
The enemy in Korea digs deep, emplaces his weapons cannily—and fights to the end when we attack

REPORTS from Korea say that the Chinese Communists have taken advantage of the lull in the fighting to fortify their positions. Typical perhaps of these defensive works were some attacked last fall by the 3d Infantry Division. After the hills were taken a careful study of the positions and the attack on them was made by the division. What follows here is taken from that report.

It was estimated prior to the attack that Hills 487 and 292 were held by an enemy battalion, and Hill 477 was held by an enemy battalion supported by normal organic weapons plus about three battalions of artillery of mixed calibers. It was known that the enemy was well dug in, that he had spent the better part of three months preparing his positions, and that he had shown marked reluctance to give up any ground to patrols probing into the area.



These works were dug into the side of a hill about fifteen feet below the top of the crest. While the positions were impervious to artillery fire they had blind spots.



Cutaway view of living shelters on reverse slopes. These usually consisted of an open trench with a shelter at each end. They were reinforced by logs and two feet of dirt.

It was therefore decided to assault Hill 487 with two battalions; the Twin Peaks, which are due east of Hill 292, with one battalion. Hill 477 was to be assaulted with two battalions as soon as 487 was taken. It was further planned that the assaults would not begin until pin-point destruction by artillery and mortar fire on enemy bunkers and other emplacements had rendered them useless to the enemy. The systematic shelling by 81mm and 4.2-inch mortars, 105mm, 155mm and 8-inch artillery was carried out for about three days.

Based on information gleaned from PWs and from questioning members of the units making the attack, it was determined that the enemy had the 2d Battalion, 423d Regiment, defending the hill mass 487, 292 and Twin Peaks (*see map*). The Heavy Weapons Company of that battalion was split up and a platoon assigned to each rifle company; usually the platoon was split up with one squad assigned to each rifle platoon. Nine 82mm mortars from the Heavy Mortar Company were used in support from positions within the battalion defenses and usually only a few feet in rear of the topographical crest of the ridge line. It is estimated that one artillery regiment, consisting of three battalions totaling 36 guns of 76mm, 105mm and some 122mm was used in direct support. It is also established that 120mm mortars were in direct support, many of which were knocked out by friendly counterbattery fire.

The 2d Battalion, 423d Regiment, was the only battalion identified by PWs in this area. However, it is likely that elements of the 1st Battalion which was in regimental reserve were committed piecemeal in local counterattacks, and were likely damaged severely by interdictory and harassing fire.

Hill 477 was defended by another regiment, the 422d, with the 2d Battalion on line likely reinforced by the 1st Battalion used in a counterattack role. The 3d Battalion was in reserve and never positively located. The reserve regiment of the division was not identified during the action and is not believed to have been committed. The 3d Division found:

That the enemy fought a static defensive fight and reserves were committed piecemeal to replace losses; no counterattack force greater than company size was identified as such.

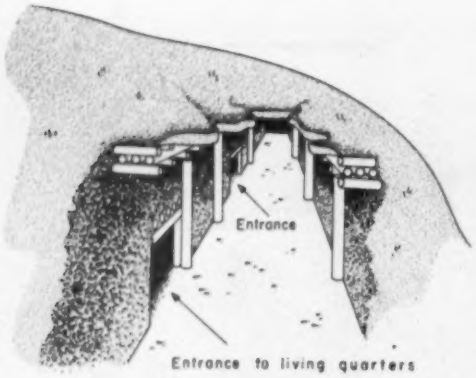
That the position was relatively shallow, the main positions being heavily dug in on narrow ridge lines and hilltops.

That most of the enemy artillery fire was not observed—at least not adjusted. It appeared that certain critical areas had been zeroed-in, and when friendly troops entered those areas the artillery was brought in.

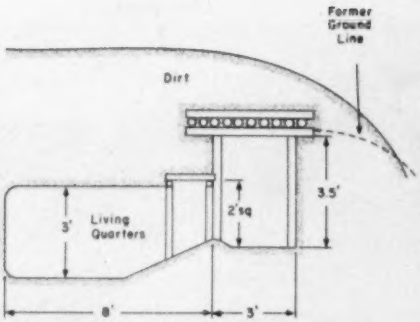
That the enemy placed his mortars just back of the ridge lines, sometimes as near as fifteen feet to the crest, thereby getting maximum range and minimum distance between mortar position and observer.

Aperture of a mortar position sited on a reverse slope about 25 feet from the crest. It opens off of a covered trench.

This four-man bunker on a forward slope was heavily protected; near misses by our artillery did little damage to it.



Sketch of trenchworks found on Hill 487.



Sketch of underground living quarters showing small entrance. The slight rise in the earth floor on the outside of the entrance to the living quarters was designed to keep water from flowing into the quarters.

That the enemy fought bitterly at close range and often launched short counterthrusts to regain lost ground.

That the enemy called mortar fire on his own positions when overrun by UN Forces.

The defense of the objective proper was concentrated on the highest ground including a series of strong mutually supporting bunkers connected with a network of deep connecting trenches, all of which also led to deep personnel shelters situated on the reverse slopes of the ridge lines and hilltops. The outpost bunkers were supplemented by open firing points from the trench network and commanded excellent fields of fire on the routes of approach.

Bunkers were well dug in and covered with alternate layers of logs and dirt and sometimes rock so that the total overhead cover ranged anywhere from four feet to as much as twelve or fifteen feet. On the reverse slopes this overhead cover was often virgin dirt. The average capacity of these bunkers was four men, although more could be crowded in.

All fighting bunkers were well stocked with ammo and hand grenades, and forward positions were nearly impregnable so long as hand grenades could be rolled down the slope.

The Division found:

That artillery and direct fire weapons effectively reduced most of the emplacements on the forward slopes and many on the crests of the hills and ridge lines.

That artillery and direct fire weapons failed to hit many emplacements immediately in rear of the ridge line or hilltop. The greater amount of these rounds were overs and fell in the valley to the rear.

That mortars could not cave in most of the emplacements and personnel shelters on the reverse slope. Their chief value was in killing personnel.

That enemy mortar firing positions situated within a few feet of the crests of ridges were almost impervious to friendly artillery and mortar except in the case of a direct hit in the mortar pit.

That aerial bombs, 500- and 1,000-pound GP, would wreck any of the installations.

The Division recommended:

(1) That we accept the fact that the CCF, when given time, will dig in deep and fortify positions heavily so that each hilltop and ridge line which the enemy has chosen to defend will be a virtual dirt-and-log fortress (no concrete was found) and should be attacked using the standard doctrines of the attack on a fortified position.

(2) That large-scale vertical and low-level oblique photographs taken by high-performance aircraft be exploited to the maximum on such positions.

(3) That 500- and 1,000-pound aerial bombs be used extensively in softening-up process (the clear-cut outline of the main defenses on hilltops and ridge lines offers pin-point targets for precision bombing).

(4) That large-caliber guns (155mm if possible) be employed as a direct fire weapon against such positions. (A road was built forward to allow a 155mm gun to bring direct fire against these positions at a range of approximately 2,500 yards. Closer range is desirable.)

FINALLY, it observed that "the final weapon in an attack against a fortified position is an aggressive, well conditioned, hard-driving infantry force which must close with the enemy and systematically destroy him and his positions."

Entrance to a trench; living quarters are off to each side.

Major General William F. Dean

THE FIRST DAYS IN KOREA

• *The overconfidence we had when we entered Korea in June 1950 was soon replaced by stubborn determination, professional competence and uncommon valor*

Brigadier General George B. Barth

A MIDNIGHT phone call on 30 June 1950 sent me to temporary command of the artillery of the 24th Division (its commander, Brigadier General Henry J. D. Meyer, was on leave in the United States). Four days later, after seeing all my artillery loaded on ships, my plane landed at the air strip in Taejŏn. In the single room of the South Korean government building used as Major General William F. Dean's headquarters, there was an air of suppressed excitement. The first U.S. troops, a skeleton battalion of the 21st Infantry with one battery of the 52d Field Artillery Battalion, were to go into action the next day far to the north at Osan. General Dean had flown in ahead of his staff and taken over command from Brigadier General John Church who, with a small staff, remained on as General MacArthur's representative to assist General Dean. The two generals were studying a large wall map. General Dean, a big robust six-footer with a bristling crew cut, was decisive; determination and leadership flowed from him. General Church, slim, wiry and somewhat stooped, revealed a calmness almost amounting to unconcern, as he went over dispositions and plans. I'm sure he had no such feeling inside for he had been through much in the past few days. He had seen the lightning thrusts of the North Koreans rout the Republican forces and drive them out of Seoul. Stopping at Suwon he had conferred with General MacArthur, but shortly thereafter had again been forced to leave.

As I watched Dean and Church I had the comfortable feeling that even though we were entering the Korean War on a shoestring, our leadership would be top-notch. The South Korean Minister of Defense occupied the adjoining office. Upon learning that I was to go forward to Osan, he provided me with two jeeps driven by Korean MPs. He also gave me Lieutenant Colonel Yim who was a graduate of The Infantry School and spoke very good English.

We left Taejon about three in the afternoon and by midnight were in Pyongtaek where I met Lieutenant Colonel Charles B. Smith, commander of the 1st Battalion of the 21st Infantry. Young, clean-cut and vigorous, Smith was my man from the minute I saw him. He probably had no more real idea of what lay ahead than I did but his quiet confidence was assurance that his men

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BRIGADIER GENERAL GEORGE B. BARTH was General Dean's artillery commander during the first days in Korea. He later went into Korea as the artillery commander of the 25th Division. General Barth graduated from the Military Academy in 1918.

would give a good account of themselves. As we rode forward to Osan where his battalion was already in position, I shared the prevailing overconfidence. I remember that Smith and I tried to prevent South Korean engineers from preparing several bridges for demolition. We finally ended up by throwing boxes of dynamite into the river from one bridge. No thought of retreat or disaster entered our minds. Shortly after daylight on 5 July I inspected the defensive position with Smith, found it on very strong ground but pitifully weak as to numbers since the battalion had been flown in without being brought up to strength and was short about three hundred men and about a third of its machine guns and mortars. He was ordered to hold in place to gain time even though his force was surrounded. The 34th Infantry was unloading at Pyongtaek and I expected to get them forward the next day in case Smith needed help. How wrong I was!

SOON after we arrived at the battery gun position, "Fire Mission" came over the phone from a forward observer. At 0816 5 July the first American round of the Korean conflict was on the way, fired by the second gun section of Battery A, 52d Field Artillery. The target was eight tanks. The observer reported fire well adjusted but ineffective, the tanks kept coming. Soon a total of forty was observed and reported. Enemy counterbattery fire came down on our battery within two minutes after we opened up, but it was not effective. We left the battery position and returned to Pyongtaek to alert the 34th Infantry. It was apparent that the bulk of the tanks would break through and must be engaged farther back.

The 1st Battalion of the 34th Infantry, commanded by Lieutenant Colonel Harold B. Ayers, was in position just north of Pyongtaek. The other battalion began arriving by rail and was sent to garrison the road center at Ansong, ten miles to the east. The remainder of the regiment was due to arrive at Songhwan during the night. In those days our "economy" regiments only consisted of two battalions instead of three, so we had no reserve to reinforce either of the widely separated battalions. Before the 34th could get bazooka teams forward, the leading tanks of the enemy came out of the town three miles north of the position. Upon being fired upon they returned to the south edge of town and remained there all day. Ayers's men attempted to stalk them but the 2.36-inch bazooka shells just rattled off their hulls. Large patrols attempted to enter the town but were driven off by small-arms and tank fire. This indicated that the enemy was building up strength and waiting until his infantry finished off Smith's battalion.

The day dragged on with no news of the fight at Osan. There was no radio contact and we had no Cub planes to scout ahead. By evening, movement in the town where the tanks were located plainly indicated that we could expect an attack early the next morning. Ayers's position was not a strong one, either flank could easily be turned. Three bridges along his front were prepared for demolition (stark reality had quickly changed my ideas about blowing up bridges!). Ayers prepared for defense, but my orders to him were different from those given to Smith. We could not afford to sacrifice a second battalion at this time. Ayers could only hope to hold out for a few hours if the enemy got around his flanks. So he was ordered to hold until envelopment was threatened and then delay in successive positions to gain time. It was apparent from the first day's action that the enemy's tanks would break through and go until stopped by some obstacle and then hole up and wait until their infantry caught up. We therefore had to block the forward bounds of the tanks as often as possible.

HOW was Smith doing? Through the long hours I waited and hoped, dreading the news that by now, I felt was sure to come. Finally, toward mid-

After fighting a gritty, rocklike defense for three days the undermanned and overgunned 21st Infantry was forced to retreat from north of Chonan on 10 July.

night four of the survivors came in exhausted and hardly coherent. A minute later Lieutenant Colonel M. O. Perry, who had been at Battery A's position throughout the fight, arrived. He was calm and collected and from him and the other four we pieced together the ghastly story.

The leading wave of tanks had been followed by swarms of Red infantry. The tanks ran past Smith's position heading down the road to the south at top speed. The infantry formed up in the protected ditch along the road at the base of the hill, attacking on bugle-call signal. The fire of our infantry drove them back but they re-formed again and again. Finally the entire position was surrounded and after about six hours our ammunition gave out and Smith had given the order to come off the position in small groups. No one surrendered, but the casualties were heavy and many wounded were left in enemy hands. The position was lost and with it all the machine guns and heavy equipment of the battalion; but when all the survivors had come in several days later only 145 of the original 500 men were unaccounted for (these are approximate figures). Smith's men had fought a magnificent, unequal fight and had gained one day of precious time. They had done all that was humanly possible. (Several months later I was glad to be at the command post of the 21st Infantry when Major General John Church pinned the Distinguished Service Cross on Smith for his gallant leadership in the Osan fight.)

From the stories of Colonel Perry and the others I learned that the first tanks came down the road near the artillery position shortly after I had left and continued to appear in small groups for several hours. The battery engaged them at a range of about a hundred yards, the tanks stopping to return fire and then moving on. Our men stood to their guns in the face of the point-blank fire of the tanks and succeeded in knocking out five of them by hits on the treads or by setting them afire. We had no armor-piercing ammunition or incendiary shell, and our high-explosive could not pierce the tank armor. When Perry finally saw that the infantry was running out of ammunition and would be forced to give up the positions, he removed the sights and breechblocks from his guns and led his men out of the position. (During the fight Perry had led bazooka teams out into the open and within fifty yards of enemy tanks. For his gallantry he also received the Distinguished Service Cross.)

General Dean arrived at our headquarters in time to hear the reports of Perry and the other survivors. He checked and approved our plans for the next day and returned to Taejon. As Perry stood up to leave I found that he had been wounded in the leg but had said nothing about it and refused evacuation. Early on the morning of 6 July, Ayers prepared to evacuate his headquarters south of the river while I went back to Songhwan to find the regimental commander of the 34th Infantry.

I FOUND the 34th headquarters in the process of moving to Chonan. After acquainting Colonel Jay B. Lovless, the regimental commander, with the situation and the orders I had given to Ayers, I left for Chonan to reconnoiter further delaying positions and arrange for the detrainment of two troop trains that were expected to arrive at any time. The remainder of Smith's battalion, consisting of Companies C and D, and part of the headquarters had arrived in Chonan. I selected a defensive position for this force about two miles south of Chonan, so that if the 34th Infantry was forced back their withdrawal would be covered. I then went on back along the railroad looking for other defensive positions and for the 63d Field Artillery, the next unit due to arrive. We stopped at a railroad station and put in a call for General Dean at Taejon. Colonel Yim, speaking Korean, was able to get through and have the stationmaster at Taejon send for a staff officer from our headquarters. This was our only means of communication since Signal Corps units had not yet arrived. We located the 63d Field Artillery and had them detrain at Chochiwon and move forward.

By the time I returned to Chonan it was early afternoon. There I was much surprised to find Ayers's battalion retreating through the town. I found Lovless, who reported that Ayers had been attacked and was being heavily pressed, with his rear guard at that time just north of Chonan. I took the reports at face value, gave orders that Ayers's battalion would tie in with the defensive position already being established south of Chonan by Company C of the 21st Infantry and, since his other battalion at Ansong was now outflanked, sent Lovless to move it by motor to the Chonan position to deepen the new defensive position. I sent my aide, Lieutenant Boyd, to General Dean to give him firsthand information of developments.

I know now that I made a grave mistake by accepting the reports of Ayers's situation without finding him and verifying them. Actually he had been attacked

On 3 July elements of the 24th Division were waiting for a boat at Japanese port.

By the 6th of July elements of the 24th Division were being flown into Korea.

Trucks and guns moved northward by rail toward the 24th's thinly held lines.

Overconfidence disappeared when bodies of Americans were found shot through the head with hands tied behind their backs.

at Pyongtaek and had blown the bridges in front of him which caused the enemy tanks to be held up all day. The Red infantry had enveloped his left flank just as we had feared and he had withdrawn his force south of the river to prevent encirclement. The enemy had stopped south of the river to wait for their tanks to cross, allowing Ayers to break contact. Ayers must not have understood that to gain time he should defend on the first available position from which he could physically block the tanks by demolitions. There were two such locations between Pyongtaek and Chonan. Instead, he had come all the way back through Chonan. I probably could have stopped him and gotten his battalion on a position north of Chonan by dark. The next day the other battalion of the 34th did get back to such a position, but met the enemy before it had time to dig in and prepare a strong defense.

TRAINS swarming with refugees and others loaded with South Korean troops moved south all day. Since the railroad coming from enemy-held territory was still intact, I feared that the North Koreans might load a train with their own troops—you couldn't tell the difference between North and South Korean soldiers—and run them through us to the rear. We had no explosives but we pulled up sections of track south of Chonan to prevent any such surprise.

That evening Boyd returned bringing General Dean to the 34th's headquarters. General Dean was much disturbed by the withdrawal and ordered one battalion to advance early the next morning, north of Chonan. I remained until the order was carried out. Then, since Smith's battalion was gone and there was no need for coordinating the action of forces of two different regiments, I returned to Taejon to resume my artillery duties, leaving with the bitter feeling that I had failed General Dean by not staying with Colonel Ayers and keeping him north of Chonan at all costs.

On the 7th contact was made and in the next several days the 34th was badly mauled in heavy fighting around Chonan. But valuable time was gained. The 34th retreated through Chonan taking up positions on the Kongju road, west of Chochiwon on the 10th. By that time, Smith had returned and reorganized his battalion; new guns had been given Battery A of the 52d Field Artillery and the 21st Infantry was fully concentrated around Chochiwon. The main attack drove against the 21st Infantry's positions where, for three days, that fine regiment held like a rock under the inspired leadership of Colonel Richard W. Stephens. Rugged, bluff and dynamic, Stephens sparked the 21st with determination and courage. Almost overnight "The Gimlets" became one of the staunchest of the regiments that saw service in Korea. His leading battalion was surrounded but held while the rear battalion fought its way up and relieved it. It was there that we first encountered the savage brutality of the enemy—six of our soldiers dead with their hands tied behind them and bullets through their heads. When the 34th Infantry was attacked and forced to withdraw across the Kum River into Kongju, Stephens's flank was exposed and he withdrew south of the river in good order. By 14 July, the 19th Infantry had arrived and taken up positions south of the Kum River for the final defense of Taejon. Meanwhile, the 34th was driven out of Kongju and retired east to Nonsan with their line facing west.

While the Reds were crossing the river and attacking the 34th Infantry's position, they also sent a force into the hills about three miles south of the town and attacked the 63d Field Artillery battalion from both flanks and the rear. Our men were caught by surprise and were driven from their position in confusion. All the guns and most of the transportation were lost. This was the first of many infiltration attacks against our artillery positions. Profiting by this early disaster, we learned that there were no "front lines" as we had understood them before. Artillery batteries had to be trained to fight as infantry in defense of their guns. Batteries had to establish observation posts, and security detachments on the hills overlooking gun positions. Furthermore, we saw that infantry commanders must plan to have tanks and mobile infantry go to the assistance of artillery in case of serious attack. After the 63d was hit we reorganized it, borrowed six guns from the other batteries of division, and got it back in action armed with two three-gun batteries in twenty-four hours.

In about two days' time I had a third battery of 155mm howitzers thrown together by drawing officers and men out of other batteries. Their gun drill consisted of firing against the enemy. They learned fast.

By such improvisations we created units missing as a result of "economy."

THE ring of steel was tightening around the doomed city, and it was apparent that the battered 24th Division could only hold out a little while. Another division, the 25th, had landed at Pusan and was on the way, but it could not arrive in time to save the hard-pressed 24th.

On 14 July, General Meyer returned to his division. My job with the Taro Leaf was over and I returned to my old command—the 25th Division. I was glad to be back among the men I had trained and worked with so long; but I had gone through trying times with the 24th and had formed a strong attachment for it. The wearers of the Taro Leaf patch had been thrown in piecemeal and sacrificed to gain time. They had contended stubbornly against overwhelming odds and I left them with the feeling that they were writing a page in American history that should be remembered.

Small Arms Combat Requirements

• *What do we want in our small arms and how can we get it?*

Colonel Seth R. Seitz

THE Korean War has stimulated a new interest in small-arms combat requirements. Reports and opinions of experienced soldiers are daily heard and read. A number of interesting articles and letters have appeared in the service journals, a flood of personal letters have been received.

All of which, with the backdrop of Second World War reports and experience, presents a most confused and contradictory scene, further complicated by the enemy's weapons factor. And as if this were not enough, we learn that the British have a new automatic rifle with a .280-inch cartridge, urged for NATO adoption. How fantastic in this age of push-button atom-izing and anatomic telecasting to find the lowly small arm on the front pages! Warfare remains more of a belly button than a push-button proposition.

The picture might become clearer if we seek out a few common denominators from the riddle of requirements and merge certain tactical requirements with technical realities. We may then produce practical requirements for small arms that are realistic.

Combat requirements play a major role in the process of progressive development. However, we can be sure that a gun developed to meet all requirements will satisfy no one.

If our technical advances were up to the publicity they get, which they are not, most weapons would not be needed and our troops could stay home and watch the enemy disappear in fantastic blasts on television. But our publicity out-guns our performance and so we must accept for the moment some decided technical actualities and limitations.

Reduced to simplest form basic infantry small arms discharge small antipersonnel projectiles over limited ranges. The true weapon is the bullet that strikes the target. Guns are a discharging means. For the purposes, ranges, terrain, and targets intended the ammunition (bullet plus propellent) is the basic factor.

Next is the factor of gun capacity to fire, which consists of:

(1) Capacity to fire by hand, or semi-automatic or full-automatic discharges;

(2) Capacity to fire without reloading for five, eight, ten, twenty, thirty, seventy-two, or one hundred or more (by machine-gun belt) shots.

Third is the factor of weapon weight which is conditioned by: mobility, in balance with reliability in combat; stability (operator control as in automatic fire); accuracy, in hands of troops; and "Gizmo."

Fourth is the factor of aptitude, training, experience, and familiarity with the weapon.

Thus, the requirements for small arms consist of ammunition capacity, weapon capacity, weapon weight, and weapon training.

AMMUNITION as we know it today includes two broad categories: submachine-gun type of pistol power and rifle (machine-gun) type.

Examples of the submachine-gun type are the caliber .45 ACP, the 9mm Luger, the Soviet 7.62mm pistol-type, the U. S. caliber .30 carbine. On the combined evaluation of power and range most powerful of these is the .30 carbine, next the .45 ACP, third the 9mm and lowest the 7.62mm pistol with its tiny 86-grain bullet at 1,300 foot seconds. On the basis of maximum effective range the .30 carbine ranks first, 9mm second, Soviet 7.62mm third, .45 ACP close to the Soviet but last. While light, fast bullets give flatter trajectory at the start they lose velocity very rapidly.

Because of its large caliber and 230-grain bullet, the .45 ACP has the most close-range knockdown power of the four, carbine second, 9mm third, Soviet 7.62mm fourth. In the space and total cartridge weight (mobility) aspect the 9mm and 7.62mm offer advantage over the carbine and .45.

If the Soviet 7.62mm, 86-grain, 1,300 f.s. load is effective for combat up to 100 yards, then the carbine is good for 150-200 yards at least, the 9mm for 125 yards, the .45 ACP for 75 yards. The carbine has by far the most penetration.

Examples of rifle (machine-gun) type are the U.S. .30 M2 (150-grain 2,800 f.s.), the Soviet 7.62mm rifle (145-grain, 2,850 f.s.), the German-Chinese 7.92mm (154-grain, 2,800 f.s.). For a quick comparison these loads hit at 1,000-1,200 yards harder than the submachine-gun types at 100 yards. The usual maximum effective or useful combat range for these cartridges is 500 yards for rifles, 800 yards for light machine guns or auto rifles, and 1,200 yards for machine guns. These loads retain one-third of their muzzle energy at 600 yards. Over a half-century of combat experience and

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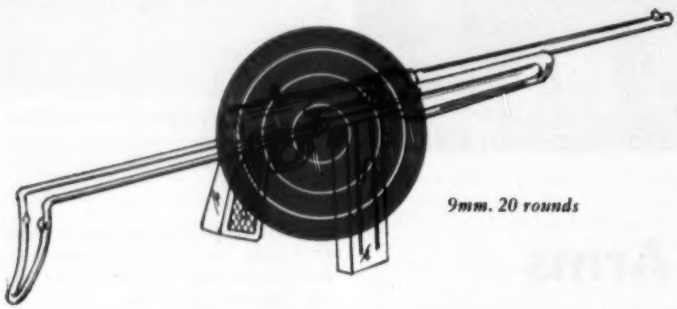
COLONEL SETH R. SEITZ is the pseudonym of a well-known gun bug who is very much at home in the field of military small arms.

analogous game-killing data support the proposition that the power, capacity, range, penetration, terminal energy, wind-bucking, and practical accuracy characteristics of this treaty-jacketed 150-grain, 2,800 foot-second, 2,600 foot-pound type, are the minimum for rifles, auto rifles, and machine guns.

All of this is a matter of degree, but requirements must take such facts into account.

In general if a gun mechanism for any level of ammunition can operate on semi-automatic it can be arranged to fire full automatic, and *vice versa*. The current



9mm. 20 rounds

Such ammunition has an important effect on weapons so chambered. You cannot use a bean-blower in combat. Your ammunition must be comfortably adequate. All of this affects the weight, shape and design of the gun.

Weapon capacity increases from the single-loader to the repeating rifle and from the repeater to the semiautomatic arm. The fully automatic weapon provides the greatest potential fire-volume but unless properly controlled it is by no means as efficient as it sounds.

The hand-operated repeating rifle such as the M1903 Springfield is bound to be somewhat more reliable under all conditions than any automatic type. However, excess lubricant will produce misfire in zero weather, and under severe conditions the bolt of the M1903 can become very hard to open due to cocking cam friction.

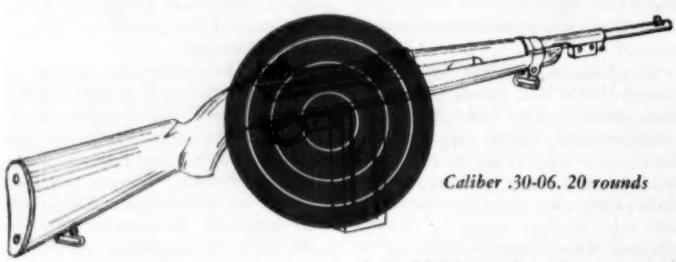
Automatic weapons of the submachine-gun type are limited to low-power pistol ammunition. Mechanically the simplest because of their low-pressure cartridge, their blowback action with heavy breech block is definitely more reliable than that of any light high-power automatic.

Such current burp guns as the U. S. Thompson, M3, Soviet PPSH, and German Schmeisser all use low-pressure, low-power cartridges with relatively heavy actions and eight to ten pounds total weight.

The U. S. carbine uses a somewhat more powerful higher-pressure cartridge in a necessarily breech-locked and more complicated action. The simpler but heavier and clumsy tommy gun is bound to be more reliable under severe conditions than a weapon of the carbine type.

trend toward shoulder rifles having both automatic and semiautomatic fire control takes advantage of this possibility. For example, the U. S. carbine was originally arranged to have a full-automatic control. This feature was eliminated but by 1944 it became a requirement which brought about the M2 carbine. A high-power rifle which performs such functions and weighs no more than a hand-operated piece is not likely to be quite as reliable under severe conditions as the bolt-action type. The fact is often overlooked that the automatic arm will usually operate as a repeater even though conditions have impaired its automatic function.

Roughly speaking the well known



Caliber .30-06. 20 rounds

Browning automatic rifle weighs twice as much as the semiautomatic rifle. The BAR enjoys a reputation for combat reliability. The air-cooled Browning belt-fed machine gun (less mounts) weighs roughly twice as much as the BAR (M1919A6 for example). The BMG has an even better reputation for reliability. The basic reason should be clearly understood with respect to any auto-weapon requirements.

Automatic weapons function in accordance with the momentum of their moving parts which include the breech-block or bolt and slide (gas) or barrel (recoil). This means mass times velocity. A heavy mass loses velocity less rapidly than a lighter mass. A heavy mass is less sensitive to interference (dust, mud, sand, rain, snow and extremes of temperature) than a light mass.

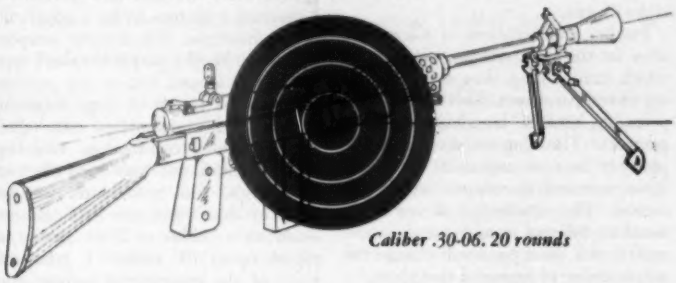
Accordingly, it must be appreciated that the moving parts of the semiautomatic rifle weigh somewhat less than one pound, of the BAR in excess of two pounds, of the BMG more than three pounds (plus a four-pound barrel in the initial recoil phase). All of these weapons fire the same caliber .30 M2 cartridge. There are of course practical limits to action speeds due to impacts, breakage, and other mechanical faults. The lightweight automatic must make up for its light parts by an increased cyclic rate. For each level of action weight there is a ***minimum action velocity*** to insure normal function and a maximum to avoid excess breakage. In round figures this cyclic rate limit amounts to a minimum of 700-800 rounds per minute for the semiautomatic, 550-600 rpm for the BAR, 450-500 rpm for the ground BMG. (The BMG is also pulling a heavy belt which requires an additional momentum in the moving parts of the mechanism.)

Veterans of ETO in World War II were interested in the unusually high cyclic rate of fire in the German MG42 belt-fed, 26-pound machine gun—some 1,200-1,500 rpm or nearly three times that of the U.S. BMG. The moving bolt of the MG42 weighs only one pound three ounces. This light member must operate the gun and pull the belt. The German MG42 is very sensitive to heavy belt loads and its high rate is mandatory for normal function.

The capacity of the various automatic weapons is decidedly affected by magazine or feed capacity. In theory, if requirements demanded uninterrupted feed, all automatic arms should have endless belts. Mobility of course is impaired by excessive feed capacity.

In 1925 a number of experimental

semiautomatic rifles were offered with 20-shot, detachable-box, BAR-type magazines. The requirement was then established that ten shots (clip-loaded) would be the maximum. Twenty years later the requirement had risen to the 20-shot detachable box. The M1 carbine started out in 1942 with a 15-shot box and ended up M2 with 30-shot box. U.S. submachine guns started out commercially with 50-shot drum, then dropped to 20-shot, and now have 32-shot. The Soviet PPSH has a 72-shot drum.



Caliber .30-06. 20 rounds

A specific example of the 20-shot box *versus* 8-shot clip indicated the following for rapid, aimed fire at 200 yards on a 12-inch bull's eye:

Semiautomatic with 8-shot clip, 40 rounds in 80-90 seconds, or 25-30 shots per minute.

Bolt-action rifle with 20-shot detachable box, 40 rounds in 80-90 seconds, or 25-30 shots per minute.

The semiautomatic rifle with 20-shot box can deliver in excess of 40-45 shots per minute on the above basis.

Any weapon likely to be employed on full automatic requires at least 20 shots in the magazine, which means roughly one two-second burst per loading. A trained two-man team can deliver more than 200 rounds in 35-40 seconds, firing ten 20-shot bursts. Especially in minimum-weight, mobile automatics, requirements for a belt with its mechanical complications might well be subjected to strictly realistic re-examination.

THE factor of weapon weight has already been touched upon with reference to cartridge power and mechanical reliability. The submachine gun saves weight at the expense of striking power, even though it makes as many noises (not as loud) per minute. It adds weight, in consideration of its limited power, to achieve greater reliability and simplicity. Barrel overheating and barrel wear are not major problems in the submachine gun with its low-power ammunition. In the high-power caliber .30 class this becomes a major problem. Solutions include a heavy barrel of four to six pounds, or a removable barrel, or both.

Barrel longevity is perhaps a sacred cow which ought to be put to pasture. A machine-gun barrel when worn out can be replaced, just as an empty belt can be replaced. The new barrel can go anywhere fresh ammunition can go. A three-pound spare barrel weighs no more than 60 cartridges, or less than one-fourth of one BMG belt, or barely more than seven M1 clips, and no more than two loaded BAR magazines.

The barrels and barrel chambers of automatic weapons are as often rendered unserviceable from rust, dirt, or other abuse as from the erosion of firing.

Heavy six-pound barrels in heavy 15- to 25-pound automatics have, of course, much more stability in full automatic fire than 8- to 10-pound arms. While most combat veterans yearn for lighter weight, as per Colonel S. L. A. Marshall, a few claim to prefer stability provided weight is the only way to get it.

Full-automatic burst fire is at the bottom of this whole problem. The requirement for such fire from the shoulder, hip, bipod, and of course, tripod, has resulted in a mass of Gizmo, more especially mechanisms to slow down cyclic rate, muzzle brakes, anti-climb compensators, shock absorbers, and fancy mounts. Most of this Gizmo is not only mechanically complicated but increases weight.

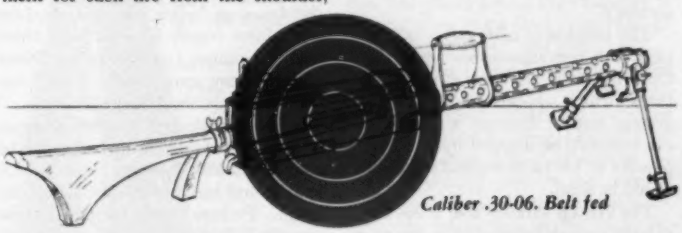
It is indeed sad to see troops whose training in aimed, single-shot fire has been all too brief, attempting to fire automatic bursts from the shoulder or hip, even with a carbine or submachine gun. Experts can do it rather well, but experts are people with some natural ability coupled with a great deal of training and experience. The BAR, M2 carbine, submachine gun, and other full-automatic, high-power rifles have been fired in 20-shot bursts on high rate held in one hand like a pistol. This can be done. But again this is a matter of extensive training and experience.

The BAR M1918A2 includes a "slow-rate" of 350 rpm (nearly two pounds worth of Gizmo). The Marine Corps, among others, expended some effort during World War II in an attempt to restore the original semiautomatic and 500 rpm rate; also to arrange for semiautomatic fire from a closed bolt. A desirable slow burst rate is 300 per minute.

Tests have been made with inexperienced personnel firing semiautomatic from off hand to determine how fast 5- and 10-shot bursts can be discharged with useful results. Results indicated that a 10-shot semiautomatic burst can easily be delivered in from two to three seconds, or at a rate of 200-300 rpm. Even experienced shooters hesitate appreciably before firing a full-automatic burst in order to get set for the shock. In delivering a series of automatic bursts out of one 20-shot magazine a shooter is likely to take fully as long and get less hits than in firing at the same targets by fast semiautomatic.

This suggests that the more realistic aspects of offhand and hip fire should be actively studied with reference to fast semiautomatic delivery *versus* full automatic on various rates.

From the bipod there is more chance for burst control. However, fast semiautomatic fire with bipod from a prone position can achieve quite impressive delivery and a high degree of accuracy where a small cone is required. When the problem is one of broad area fire against indefinitely located targets the niceties of 1,000-inch range, 3-mil (3-inch) patterns mean little or nothing. Burst grouping is another sacred cow. The water-cooled heavy-tripod machine-gun concept has caused much harm to the effective advance of light high-power shoulder automatics.



Caliber .30-06. Belt fed

THE basic accuracy of the rifle and its ammunition is considerably influenced by requirements. The fact is that average military rifles and service ammunition are good for 10-shot groups of five to six inches at 100 yards. If the sights are carefully adjusted a prone man could be hit every time at 300 yards, a kneeling man up to 50 per cent of the time at 500 yards. Military mass-made rifles capable of consistent 3-inch, 10-shot groups are rare. Of course it would be nice if a 2-inch requirement could be met.

American military rifle sight requirements are quite amazing. American marksmanship is a tradition which is preached in peace but rarely practiced in war. It is said that targets are rarely seen in combat so aimed fire is obsolete. Accordingly our rifle sights are issued with adjustments almost but not quite ideal for competitive target matches. The front sight post is excellent for target (or any) shooting, the rear peep is just a little too large for the finest target shooting and just a little too small for combat in bad light.

The M1 carbine started out with a very realistic peep sight but requirements arose which resulted in a nice but not very rugged target sight for the 300-yards shooting to which it is ill-adapted. Of course the ultimate will be a 20-power telescopic sight for the M3 submachine gun!

No rifle or machine gun is any better than its zero. If the sights are not and cannot be readily adjusted so that the shots will hit the aiming point (bull's eye) at 100 or 200 yards, then aimed fire is meaningless. So also is shot-group accuracy.

The simplest possible sights to accomplish such zero adjustments are the best. Once the basic elevation is set for 200 yards, which appears to be a normal average combat distance, a sight which can instantly be snapped up to 350 and possibly to 500 yards without adjustment would be ideal.

The average infantryman is not likely to have enough training to be expert on weather windage and accurate range estimation. If the rifle should be used by an expert he will know how to hold off for weather windage and hold over or under for odd ranges. If the rifle is to be used by a super-expert, mount a four- or six-power telescope with ½-minute clicks and issue Wimbledon Cup match boat-tails. He is a sniper. If he knows that much he'll get spot-promoted out of his sniper job!

Americans have difficulty striking a balance. We cannot cope with halfway measures. Though we worship at the shrine of team play in sport, industry, and tactics, we too often fail to recognize the same need for integration of essential features in our weapons. This is a matter of imagination, understanding, experience, evaluation, and judgment—and there is no substitute for judgment. Simplicity remains one of the basic principles of war.

Further manifestations of Gizmo are seen in shoulder-weapon accessories which include sling, sling swivels, stacking swivels, bayonets, flash hiders, compensators, grenade launchers, and rifle grenades. The sling and its swivels are probably the most important. Its importance increases as weapon weight increases. The attachment of any additional or different mass of metal on the muzzle of a rifled piece will change the zero or center of impact of that piece.

SOMEWHERE on a Revolutionary War battlefield there is a monument which shows where one Major Patrick Ferguson of the Redcoats met his Maker. You can walk a long No. 1 wood drive plus a professional mashie shot (No. 5 iron) to the marker which attests to the firing point of one Timothy Murphy of Morgan's Rifle Corps who brought about the decline and fall of Ferguson. Ferguson had on a red coat but Tim had a rather limited type of weapon. Imagine Murphy with a good semiautomatic sniper rifle, 20-shot box-fed!

The point is you can perform quite an economical operation with small arms if you have a bit of aptitude and adequate training. Occasionally one hears of Korea combat incidents involving experts, like the American Indian who accounted for some forty North Koreans with three BAR magazines (sixty rounds). None of the enemy came inside of over one hundred yards, incidentally.

Some experienced combat veterans have suggested that enemy targets can be seen if you look for them, know where to look, and make an effort to detect the target. Perhaps some training in the detection of targets suitable for small-arms fire, and specific training in how to hit such targets would prove quite valuable. It is also easier and cheaper to transport ammunition to a combat training range in the U.S.A. than to a battle area abroad. An ounce of lead for practice in prevention may be worth several tons for an ill-aimed cure.

If most rifle-armed troops were trained so that whenever five bobber targets are exposed for ten seconds at 50-100 yards, at least three will be hit out of five shots; and if such troops are trained to get at least one hit out of every two or three shots fired at a single walking bobber target at 100-150 yards—well, the enemy will be very unhappy and General Ridgway's directive to kill as many Commies as possible might be quite surprisingly implemented.

PERHAPS we can now perceive a practical requirement for a pistol-caliber, lightweight, close-defense weapon. If this can be of a simple blowback type and weigh around four or five pounds, so much the better. A large magazine capacity and semiautomatic only represents realism in requirements. One clip can be pumped out with burst effect in six seconds. This is to be the weapon that any dumb jerk can load and fire—and hit a bobber at 25-49 yards (an expert, up to 100 yards). It takes the place of the complicated carbine and clumsy submachine gun. It is cheap, simple, stands abuse, has 50- and 100-yard sight elevations. NATO could use 9mm.

The basic rifle shoots caliber .30, 2,800 f.s., 150-grain. It is semiautomatic only, has a 20-shot detachable magazine, weighs around eight pounds. It holds a constant zero, has convenient means for setting the sights on 200-yard zero. The rear sight can easily be flipped to 350 and to 500 yards. (A 4- or 6-power telescope can be mounted on this rifle.) It would be desirable if the soldier or a corporal-armorer could remove and replace the barrel.

The light machine gun or auto rifle is perhaps the same basic rifle action. Issued to the more expert this full and semi-automatic weapon would have a slightly heavier barrel (3.8 pounds), a flash hider, a folding bipod, auto-fire control, same 20-shot, detachable, box magazine, rear sight adjustments up to 800-1,000 yards, full air-cooled barrel, barrel-removal feature of the rifle if possible, a weight complete of ten to twelve pounds. This weapon would be fired as a rifle from all positions, from the shoulder or hip on fast semiautomatic only; from the mount or other firm support on full automatic.

The air-cooled machine gun would be as much lighter than the BMG M1919A6 as possible without seriously reducing reliability.

And cut down the extraneous Gizmo in requirements. It just doesn't pay!

Thus the requirement for small arms in combat still remains. Targets can be seen and need to be hit. Even a gook with a bolt-action rifle must be reckoned with. The press has reported examples of good rifle shooting by the enemy in Korea.

Shrapnel, Semantics and Such

Major General H. W. Blakeley

• If you call soldiers "boys" you can probably get away with calling shell fragments "shrapnel," but if you have a decent respect for the military profession you won't

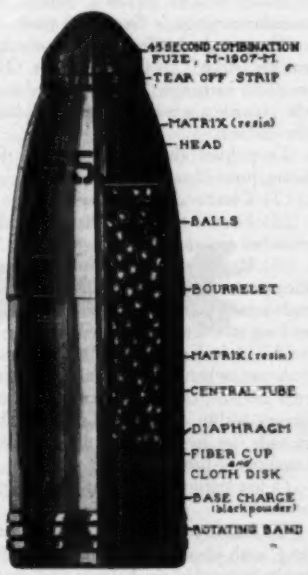
SEMANTICS, the science of the meaning of words, makes a strange bedfellow for those two old veterans of many wars, ordnance and gunnery. The editors of the COMBAT FORCES JOURNAL brought the three together recently when they commented on the growing use of the word "shrapnel" when actually "shell fragments" is meant.

To start with the ordnance and gunnery side of the picture, the simple fact is that today's journalists, historians, doughboys, and maybe even young artillery shavetails don't know what shrapnel is. It must sound like a good name for shell fragments. But that is speculation; let's get the facts first.

Shrapnel, and if anyone can find an essentially different definition anywhere he is ahead of me, is "an artillery projectile provided with a bursting charge, and filled with lead balls, exploded in flight by a time fuze." It was named for its inventor, General Henry Shrapnel of the British Army, who died in 1842, so it is no Johnny-come-lately in the fields of ordnance and gunnery. Nor is it necessarily obsolete, as we shall see later.

In pre-World War II days, shrapnel was regarded as the most efficient type of ammunition against troops in the open. The 75mm shrapnel projectile contained 270 lead balls, each about a half-inch in diameter, in a smoke-producing matrix. The 155mm shrapnel packed a lethal load of 800 balls. Each projectile was practically a shotgun which was fired, by means of the time fuze, ideally at the height which would produce the maximum effect on the enemy. At the moment of burst, the bullets shot forward with increased velocity, normally without fracturing the case. The result was a cone of bullets which swept an area generally much larger than the area made dangerous by the burst of a high-explosive shell of the same caliber. Even for the relatively small 75mm gun, the effective area at a range of 4,000 yards was about 35 yards wide and 50 yards long. In addition, some balls with equally effective velocity were scattered less densely over a zone roughly twice as wide and several times as long. The height of burst had to be adjusted by observation of the smoke puff produced at the moment of explosion, and by proper changes in the setting of the time fuze.

Obviously, shrapnel would be an effective weapon against Communist-type armies which have as a major characteristic the ruthless use of their superior manpower in frontal attacks. It was not very effective in trench warfare of the World War I type, and that fact influenced our decision to abandon it. But shrapnel was abandoned primarily because it was difficult to get the height of burst adjusted properly even under conditions of good visibility, and impossible to do this in darkness or bad weather. It also added to the complications of ammunition manufacture and supply. With the proximity fuzes now available the problem of adjustment of the height of burst could be overcome; the need for a smoke-producing matrix to permit observation of height of burst would be eliminated; and sharp hard-metal missiles, not unlike small shell fragments, might replace the round lead balls. The complication of ammunition supply would remain as an objection.



Shrapnel, Mk. 1 for 155mm gun.

MY first experience with the use of the word "shrapnel" to mean shell fragments was in Normandy about D plus 2. The 4th Infantry Division had landed on Utah Beach on D-day with surprisingly light opposition, but as we turned north toward Cherbourg we ran into rough going that was to cost the division over 5,000 battle casualties in the next three weeks. A surgeon mentioned to me that one of our regiments, the 22d Infantry, was having particularly high losses from shrapnel wounds. As division artillery commander, I was very much interested. Were the Germans using what we regarded as an obsolescent type of ammunition? Or did they have an improved variant of it? I visited the regiment and asked questions everywhere. No one knew of anyone wounded by shrapnel. When I hunted up the surgeon who had first mentioned shrapnel, and told him that practically all the casualties in the 22d were from shell fragments, he said, "That's what I told you."

Since then I have frequently noticed the misuse of "shrapnel" by newspaper men, radio commentators and historians. Captain Edward Ellsberg, USNR, a notably competent individual both in the field of writing and in the complex techniques of naval salvage operations, went the whole way in his book, *No Banners, No Bugles,* and used "shrapnel" to mean shell fragments, bomb fragments and torpedo fragments. (Incidentally, he also referred to hail as "the rattling shrapnel from the heavens"—a good descriptive phrase, even if unrelated to the present argument.)

There can be no question but that the word in its new meaning has attained reputable, national, and even international use, although that expert in many fields, Mr. Winston Churchill, has not so used it as far as I know.

"Shrapnel" is not, of course, the only

MAJOR GENERAL H. W. BLAKELEY, USA, Ret., twice an instructor at the Field Artillery School, is now a frequent contributor to magazines and newspapers. He served with the 4th Infantry Division in the 1944-45 campaigns in Western Europe.

military word that has suffered misuse. Practically all war correspondents used —and are still using—"artillery barrage" to describe any kind of artillery fire involving more than one gun. The greater part of all artillery fires are "concentrations," that is, fire on an area. Barrages are fired on a line. A "standing barrage" is defensive fire on a line, usually placed across a probable avenue of enemy approach; a "rolling barrage" is fire on successive lines placed, in accordance with a time schedule, in front of friendly infantry in an attack. There are variants and subclassifications such as normal, emergency and box barrages, but it is a safe bet that nearly all the "barrages" in news stories were, in fact, concentrations.

TO pass from fact to personal opinion, I think that the COMBAT FORCES JOURNAL pointed the way when it said, in the comment earlier referred to, that an assistant editor insisted that saying "shrapnel" when we mean "fragments" is worse than calling a soldier a "boy." Non-military writers and speakers—particularly politicians—have been calling soldiers "boys" for many a long year, and will continue to do so as long as we have the kind of so-called civilization that requires soldiers, but let us hope military men and civilians who write with knowledge and respect for the military profession will not.

Incidentally, the editors of *The Reporter* went against the trend in a recent issue when, after referring to "embittered men in Korea," they added the parenthetic comment, "We hate the patronizing word 'boys.'"

Admittedly, to argue against what is only lack of dignity is probably to risk being called a fuddy-duddy. After all, we have the case of a four-star Air Force general, George Kenney, referring to his airmen as "the kids" in two otherwise reasonably formal books, and apparently including his field-grade officers in the term. (Speaking of semantics, does *field-grade* apply to airmen?)

The case of "shrapnel" is different in that clarity, not dignity, is involved. Let the part-time war correspondents, the fiction writers, the orators, and even the historians misuse "shrapnel" if they want to, but let the military press and military men writing for the general public say what they mean, and not encourage unnecessary confusion.

There is the old military toast to the ladies: "Our arms, their defense; their arms, our recompense." Military men should protect that semantics gal!

ENERGA: *TANK KILLER*

Captain William S. Smith

From the *Infantry School Quarterly*, January, 1952.

THE latest addition to the family of antitank weapons—the Grenade, Rifle, HEAT, T41, popularly known as the Energa rifle grenade, gives the individual soldier great tank-killing power.

The Energa grenade provides greater armor penetration than the M9A1 rifle grenade, along with increased range and accuracy. Although the Energa contains a much larger explosive charge, it weighs approximately the same as the M9A1 grenade.

The Energa, using a shaped charge, will penetrate the armor of any known tank at any range from which a hit can be made. It does not depend on velocity to obtain penetration. Fin-stabilized in flight, the projectile has in its nose a fuze that, upon impact, initiates base detonation of the shaped charge.

The T41 grenade is 15.75 inches long; it weighs 1.4 pounds; and its largest diameter is 2.95 inches (75mm). Its maximum range is about 300 yards.

The standard rifle grenade cartridge, caliber .30, M3, is the propellant. The auxiliary cartridge, M7, is not used with the grenade nor is the grenade fired from the carbine.

To prepare the Energa grenade for firing, proceed as follows:

(1) Clear and lock your rifle.

(2) Load a grenade cartridge in the chamber and close the bolt.

(3) Remove the rubber fuze cap from the nose of the grenade and place the grenade's stabilizer tube on the muzzle, making sure it is fully seated.

(4) Unlock your rifle, aim, and fire.

A man, when trained in firing the Energa grenade, can place accurate fire on targets within a 100-yard range. The grenade can be fired from the standing, kneeling, or prone position.

To fire from the standing or kneeling position:

(1) Insert your left arm in the hasty sling; with your left hand grasp the rifle firmly, forward of the balance, and draw your left elbow well back so that the sling is tight across your chest.

(2) Place the comb of the stock in your right armpit with your right upper arm passing over the stock. Grasp the small of the stock with your right hand in the normal manner—thumb over the top, index finger on the trigger.

(3) Hold your head in a raised position and inclined to the right so you can make a correct sight alinement.

(4) In the standing position, turn your body about 60° from the line of fire, with your feet spread about two feet apart. Lean into the rifle with your left knee bent and your right leg straight but not stiff.

(5) In the kneeling position, kneel on your right knee, half faced to the right, with your left knee bent. Lean well forward so you are not sitting on your right heel.

To fire from the prone position, use a handy butt rest (stump, rut, or hole in the ground). Hold the rifle in position by placing your right upper arm over the comb of the stock; with your left hand, grasp the rifle firmly forward of the balance. Hold your head up and inclined to the right so you can make a correct sight alinement.

To sight and aim the Energa grenade:

(1) Estimate the range to the target.

(2) Aline the target in the vertical slot in the sight leaf.

(3) Move the rifle to a position where the sight set corresponding to the estimated range (30, 70, or 100 yards) coincides with the "head"—ogive—of the grenade and is alined on the target.

For a stationary target, the point of aim is the center of mass of the target. If the target is moving, the correct leads are:

Miles Per Hour	Leads at Range of 30 Yards	70 Yards	100 Yards
15	½	1	1½
25	1	2	3

These leads are based on the apparent length of the target and apply regardless of the angle of approach or departure.

The march was a nightmare; we would march 10 minutes and rest five.

WINDCHILL 2300

You learn about life in the frozen north when indoctrinated at the Canadian Army's Arctic Center at Fort Churchill

Major John W. Barnes

IT was thirty degrees below zero outside. The thirty-mile wind blew straight from the Pole. Windchill approached 2300, but inside the tent it was comfortable. The five of us were soaking up the heat from the one-burner and two-burner gasoline stoves. We had just finished the second day's hike of our three-day exercise.

And then it happened. The two-burner stove tipped over and in an instant the nylon inner tent liner was ablaze, and out of the tent we tumbled. Bill Kendall, a Canadian sergeant, was the last one out and he pulled down the tent pole to collapse the tent and smother the fire, but not before some damage had resulted.

IN the fall of 1946 a Canadian arctic test station was established at Fort Churchill, Manitoba, Canada. Fort Churchill is about five miles southeast of the town of Churchill, northern terminus of the Hudson Bay Railroad. It was because of this rather pitiful substitute for modern rail transportation that Fort Churchill was located at its present site.

When wind is taken into consideration, Churchill is said to be the coldest spot in North America and the third coldest place in the world (one of the colder spots is in Russian Siberia and the other in the Antarctic). Most people, when they think of cold weather, consider the temperature alone, and neglect to think of the effect of wind.

The effect of wind is beginning to be considered in a calculation of cold. A "windchill factor" has been derived which is a function of both temperature and wind, and which, technically, expresses the rate of cooling in kilogram-calories per square meter per hour. The long-haired formula correlates the two separate factors of wind and low temperatures and provides a basis for comparing the over-all effect of entirely different winter conditions. A windchill of 2300 means nothing by itself. But when you know that it was twenty-eight below zero and there was a wind of thirty miles per hour, and that it is equivalent to a temperature of eighty-five below zero when there is relatively no wind blowing, then 2300 begins to mean something.

There are four kinds of cold in the Arctic: cold, very cold, extreme cold and ultra cold. The corresponding seasons at Churchill are summer, fall (or spring), winter, and dead winter.

Churchill stays colder longer than anywhere else in North America, too. Daily temperature readings show little variation. If it is cold in the morning, it might be two degrees warmer at noon, provided the sun is not hidden by blowing snow. In dead winter, the sun doesn't shine long enough during the day to bring any warmth; sunrise is around 0900 and sunset around 1500 hours. So no more ideal spot could be found for the testing of equipment or for teaching man about the Arctic.

THE U. S. was represented at Churchill by a group of engineer soldiers and officers (plus a few civilian project engineers) from the Engineer Research and Development Laboratories at Fort Belvoir, Virginia. They were organized into the Arctic Test Branch, more familiarly known as "Frosty." At the time the contingent left Belvoir in November 1946, I was on duty at the Laboratories as Chief of the Demolitions Branch. Some of the equipment that was being developed in my branch was scheduled for arctic testing and my superiors expected me to observe the arctic testing of the demolitions equipment. So I volunteered to go to Churchill for a week in January 1947.

When I arrived at Fort Churchill it was thirty below zero with a slight breeze. I had on my short overcoat, dress uniform, cotton underwear, and low shoes. I was cold. My ears were slightly frostbitten after the five-mile drive into camp. I hurried into arctic clothing.

During my first week, I observed several tests that were being made on various items of demolitions equipment. I had been bothered about all the delays in the scheduled tests, but I wasn't at Fort Churchill over twenty-four hours before I understood the reason: men and equipment are absolutely unable to operate with any marked degree of efficiency under conditions of intense cold.

Work call was at 0800. It took at least an hour to start and warm up the weasels before they could be driven out of camp and we never ventured out with less than two weasels. In case one broke down we wouldn't be stranded. It took thirty minutes to drive five miles over hard-packed uneven snowdrifts to the test sites. So it was 0930 before we got to work. In order to get back to camp for lunch, we had to leave at 1130. Then we couldn't get back to the work area before 1330 and by 1530 we had to leave in order to get back to camp before dark. Under the best conditions we only had four hours a day for actual tests.

Those four hours spent weren't efficiently used. At least half of the four hours was spent in the warm-up shack. We could work on a piece of equipment for about fifteen minutes and then have

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MAJOR JOHN W. BARNES, Corps of Engineers, is now an instructor at The Armored School at Fort Knox. During the war he served with the combat engineers in Europe. He is a 1942 graduate of the Military Academy.

to duck into the shack for fifteen minutes of thawing out. And about half of the fifteen minutes of "working time" was spent flailing the arms and hands.

During a "blow" (winds over twenty-five miles an hour) we couldn't leave camp at all for fear of getting lost; visibility was zero because of the blowing snow.

I had had enough of it by the end of my scheduled week. But my commanding officer at the Laboratories decided otherwise. I was just the one, he decreed, to be an observer at the Canadian Arctic Winter Indoctrination Course. And so I was stuck for another two weeks.

THE Canadian Arctic Winter Indoctrination Course is designed to teach the soldier how to survive in the Arctic. It stresses individual initiative, common sense, and physical fitness.

We towed 500 pounds of supplies on the toboggan, carried more on our backs.

Practical exercises follow classroom instruction. Short over-snow marches of an hour's duration are increased in distance and complexity to include an all-day march on the sea ice of Hudson Bay. Snowhouses and caves are built within the camp area; and stoves and pressure cookers are operated both inside and outside of shelters. The final three days of the two weeks of instruction are spent on a three-day exercise.

On our three-day exercise we were split up into groups of five, and I found myself with four Canadians—an officer and three soldiers. Lieutenant Doug Henton of the Royal Canadian Horse Artillery was the group leader. (I was officially on observer status only and had absolutely no command responsibilities.)

We loaded our toboggan with our gear. The 500-pound load included a five-man tent with inner nylon liner and rubber floor, one large or two small caribou skins per man, a one-burner and a two-burner portable gasoline stove, axes, knives, saws, picks, and intrenching shovels, a gasoline lantern, pressure cooker, and saucepan, compass, binoculars, and first-aid kit, and three boxes of standard GI five-in-one rations. On top of the load went our sleeping bags and rucksacks.

The next day ushered in the worst weather of the winter. The wind howled out of the north at thirty miles an hour and the thermometer registered between twenty-eight and thirty-two below zero. Visibility was zero, and the air was full of fine hard-driven snow. We thought the exercise would be postponed. It wasn't.

At 0800 we manhandled our toboggans outdoors, and hitched up. Four of us were to pull the toboggan, and the fifth was to guide it from the rear. We would rotate positions. We mushed. Our toboggan went right through the loose snow on top of the gravel roads in camp and grated on the road surface. It scraped all the wax off the bottom.

The first day's march was a nightmare. We were exhausted before we had worked our way out of camp and on the ridge we were to follow. In camp we were in the shelter of the buildings, but the loose snow provided no adequate footing and we slipped and struggled foot by foot. On the ridge, which was only ten feet or so above the surrounding tundra, we had good footing on the hard-packed drifted snow, but we were completely at the mercy of the wind. It took all of our energy to keep the toboggan moving, and we progressed at snail's pace.

We marched for ten minutes and rested five; our average rate of march was one mile an hour. While marching, we would loosen our clothing to permit the air to circulate. We didn't dare perspire. Perspiration is dangerous in extreme cold for if your clothing gets damp it no longer insulates you from the cold.

WE marched three miles and made our first camp site. It was at a twenty-foot snowbank on the lee side of a rock outcropping. We dug a niche in the snowbank large enough to prepare our lunch. After ten minutes Lieutenant Henton finally got the gasoline stoves going. You can't manipulate the needle valves and small pump handles with your fingers in clumsy arctic mittens and when you take them off your hands get numb even though you are wearing light wool or nylon gloves to keep the cold steel from tearing your flesh. To warm your hands you place them under the armpits or next to the stomach for several minutes.

Doug finally got the stoves going and we broke open a box of five-in-one rations. The first thing I picked out of the box was a book of matches that had this inscription: "Watch out for malaria. Take atabrine daily." Doug put snow in the pressure cooker, enough to provide an eighth of an inch of water. Then he put in a large can of pork and beans, cutting a hole in the can to prevent it from bursting, screwed down the cooker lid, and turned up the flame. In the deep saucepan he started to melt snow to make coffee. It takes time to melt enough snow to make coffee. Before the snow can melt it has to be heated from minus thirty to plus thirty-two degrees. It took more than thirty minutes to get enough snow melted. By that time the pork and beans were ready.

Eating in an arctic blow is uncomfortable. I took off my mittens and started to eat. After three bites, I had to warm my hands. It is almost impossible to prepare and eat a cooked meal on the trail. It is more practical to carry a lunch.

A little after 1300 we began to build a snow cave. It was backbreaking work. Until we could dig ourselves enough headroom, we had to do all the excavating on our stomachs, then kneeling, worming our way deeper and deeper into the snowbank. We took turns until we had enough room to work together inside. All we had to do the job with were infantry intrenching tools: a pick, an axe, and a tablespoon.

It took four hours. When we were through we had a cave twelve by seven feet, four feet high. We put our caribou skins on the snow and on top of them our sleeping bags. We poked a hole with a pole through ten feet of snow for ventilation. We had to keep this hole open to let the monoxide gas from the stoves and gasoline lantern escape. Outside the entrance we built a small igloo and in it stored our rations, intrenching tools, tent, and minor paraphernalia.

IT was thirty below outside the cave, but by suppertime it was comparatively nice and warm inside. We had to keep the cave below thirty-two degrees; otherwise the roof and walls would have melted. Still it was sixty degrees warmer inside than outside. Our heavy sweaters and underwear left us quite comfortable.

When we got ready to hit the sack it was a race against the cold to get undressed and snuggled into the sleeping bag. We had been told to sleep naked; this, paradoxically enough, was supposed to provide a maximum of warmth. But it took a lot of will power to take off those last layers of clothing. The first night I

You carve blocks of snow and stack them around the sides of your tent.

followed instructions, and slept relatively comfortably. The second night I decided to prove to myself the wisdom of sleeping nude. I wore my underwear, shirt and trousers and was miserably cold all night. Within limits, the more clothes you sleep in, the colder you are.

A snow cave induces claustrophobia. I had a morbid dread of being fenced in. You have to fight it, drive it from your thoughts every conscious moment after you douse the gasoline lantern and zip the sleeping bag up over your head. Your thoughts tend to run away with you: Five of you packed in like sardines . . . one small ventilating hole for air circulation. What if it plugs up? . . . ten feet of snow over you and only two or three feet from your face . . . what if it should cave in on you? You feel and breathe the absolute pitch blackness. It is stifling and heavy.

You fight against claustrophobia, overcome it. I know of one man who walked up and down in front of a cave all night, preferring the stinging cold to the fear of being crushed or stifled.

GETTING up was harder than going to bed. You sit stooped over in bed to keep from brushing against the cave roof which has become a sheet of ice from condensed breath. You struggle into your winter undershirt and wool shirt, which you have slept with all night in order to get them thoroughly dry. Each button is a slow agonizing job. You have to sit on your hands for several minutes to warm them between buttons. It takes thirty minutes to get on all your clothes except your footgear. Light and heavy socks, insoles and finally boots take another thirty minutes.

It took us an hour to break camp, stow our gear on our toboggan, and police up. It was just getting light when we mushed at 0800.

Three more hours of exhausting torture, ten minutes hot and five minutes cold, over and over again. Pull and strain and lunge and overheat, then rest and cool off and freeze. During each halt we examined one another for telltale white patches of frostbite on our exposed faces.

Frostbite is an ever-present danger. It strikes without warning and must be treated immediately. The dangers are lack of blood circulation, gangrene, permanent damage or loss of the affected part. You cannot feel frostbite; there is no pain. You have to see it, or feel it with your hand. In the Arctic you do not venture away from camp alone, but travel in pairs, so that you can watch for frostbite on each other. The remedy for frostbite is not rubbing snow on the affected flesh. This harsh action will rub the brittle skin off. You place the palm of your hand over the frostbitten area; this thaws the frozen flesh in a matter of seconds, and the only aftereffect is a tingling as the blood begins to circulate again. But if frostbite is neglected or undetected it is as serious as a bad burn.

Frostbite is not limited to exposed flesh. It may also hit other parts of the body. One of the danger spots is the feet. If perspiraiton soaks through socks and insoles so that they no longer insulate the feet, frostbite may result. And you don't know it until you take off your footgear at night. Socks must be kept clean and dry. At least one change a day is mandatory.

THREE hours, three miles, and we halted for the day. We got our tent up despite a raging wind. It involved tving ropes and fastening buttons without gloves, for the few seconds at a time that we could stand it. It involved trying to anchor the tent with blocks of snow carved from the hard-packed snow, and stacked around the four sides of the tent. It involved digging holes several feet deep in the snow in order to find an exposed root or sturdy bush to attach ropes to keep the tent from blowing away. It took a little more than two hours to put up the tent and move in.

Combined with our body heat, double-walled tents, and tightly buttoned tent flaps, the heat from the gasoline stoves and lantern soon warmed the tent up to well above freezing. However, even a warm tent doesn't behave according to custom. From the top of your head to your feet, there is a temperature differential of a hundred degrees. Heat rises, so your head basks in seventy-degree heat while your feet continue to freeze in thirty-below cold.

Our spirits rose though. It was cozy and warm. It was bright and cheery. This was to be the best meal of all, and we were ravenous: the smell of food was temptingly delicious.

And then the tent caught on fire!

Thank God for Sergeant Bill Kendall. At least we had the remnants of a tent left to move back into. The nylon liner was full of holes but the tent itself was in pretty fair shape.

We were at an all-time low as we moved back into it. What followed was a nightmare. Both the gasoline lantern and the two-burner stove were out of commission. No light. No heat. Cold supper. Tepid coffee. Frigid night. The longest one I ever spent. It lasted from 1500 in the afternoon until 0700 the next morning. It was all like a bad dream. The only thing that kept us going was the knowledge that we were going to return to base camp on the next day. That and our sense of humor which we managed to salvage.

We staggered back into base camp shortly after noon on the third day, having spent all morning tacking back and forth into the wind which blew straight from base camp to our overnight camp. Walking into an Arctic blow is impossible for any length of time.

But for all the intense misery we had to put up with during our three days and two nights, it was with a sense of mental (if not physical) exhilaration and personal triumph that we returned to camp.

I was never more glad in my life to be through with an assignment. When I returned to Fort Belvoir, I vowed never to go north of the Mason-Dixon Line again, if it could be helped. I was sick of the cold, fed up with the barrens of Northern Canada.

And yet, two years later, I was back at Churchill again. And at my own request. The challenge of the Arctic—the desire to conquer it—is almost irresistible.

★ CEREBRATIONS ★

Our literate cocktail-hour tacticians stand to receive as much as $10.00 for their contributions to this department. However, the price for those "dashed off" with scant consideration for the rules of composition and rhetoric will be much less. Hold them to four or five hundred words and type them double-spaced.

Drill

The semanticists tell us that "drill" is a bad word, stultifying to the imagination and insulting to the intellect. It is designed to produce automatons, witless lumps of sodden human clay, fit only for cannon fodder; and the drillmaster is narrow-minded, profane, coarse, brutal and sadistic, or so the professional pacifists have been telling us for two or more generations.

And so we soldiers shamefacedly change "Drill Regulations" to "Training Regulations" and thence to "field" and "technical" manuals and go all out for technique and methods of instruction and training, principles of military education, and research and analysis in psychiatric and psychosomatic reactions of the soldier to his noncivilian environment. Fine things, broadening and deepening our knowledge of that most basic weapon, the soldier.

But perhaps we could still find some good in that old bogey, drill.

Your lanky teen-age daughter goes to a house party. A few days later her hostess says, "Your daughter makes such a charming guest. Such poise and good manners. So willing and helpful." You do a double-take and a flash-back—back to the days of "No, no, honey, you drink your milk, not bathe in it." "No movies until the dishes are done." "You *will* get up when Mrs. Smith comes in, even if it is six times a day." You glow for a week and the years of drill seem worth while.

It was a big evening and you really should have called a taxi rather than drive home yourself. But you have long since memorized all the cross streets and blind corners, the places where the neighbors' kids leave their tricycles, the tricky turn between the mulberry tree and the water hydrant. When you get in the garage you're glad that you have done it so many times before.

The telephone rings and the General gives you an important message just as the electric lights fail. Good thing that you always keep a scratch pad, pencil and flashlight by the 'phone.

The batsman lines one like a rifle bullet just inside third base. The baseman is almost as amazed as you are to see the ball safely in his glove. Dumb luck? We know better. It was hours and hours of drill.

The old story of the great musician who said of his playing: "If I stop practice for one day, I know it. If I stop for two days, my wife knows it. If for three days, the world knows it," has a lesson for us soldiers. We cannot afford to accept anything less than the highest attainable standards.

Seminars, group discussions, conferences, lectures, visual aids, county fair demonstrations and collateral reading are all fine things. They really are. I tried them and found them extremely useful. Also I asked a Corps signal officer what he thought about the telephone and radio techniques of most of the staff. He almost had apoplexy. I watched the instruction in "Service of the Piece" by a chief of firing battery who didn't know the posts of the cannoneers. I know a good combat outfit whose casualties from accidental firing of weapons were more than its battle casualties over a period of several weeks.

So let's re-establish drill as an honorable and honored activity of soldiers.

Drill for ever higher standards of achievements in all duties.

Drill message center clerks, survey parties and movie projector operators. Drill G2s, finance clerks, truck drivers, military policemen, chaplains, radio repairmen.

Drill infantry platoons, operations sections and Ordnance repair crews.

Drill in field-stripping a cigarette butt, in writing operations orders, in pulling the pin out of a hand grenade before throwing it.

Drill for precision, speed, teamwork.

Drill for physical and mental conditioning for self-confidence, for unit *esprit*, for morale and for automatic response to commands.

It will pay off in the clutch—where pay-offs are mighty important currency.

COL. ROBERT F. HALLOCK
Artillery

In Defense of the Target Grid

In the December 1951 issue of COMBAT FORCES JOURNAL, Captain William R. English asks "How good is the target grid?" and proposes a system of precomputed charts for each 100 mils of angle T for use by the computer after the initial plot of a target. While I will attempt to defend the target grid against what I consider invalid criticism, let it be understood that the entire target grid procedure has much room for improvement. The Artillery School and Army Field Forces Board No. 1 are endeavoring to improve both technique and equipment.

The specific question of how good is the target grid has been asked of every artillery unit in the Army. Before it was adopted in 1949, all units tried it and a majority were enthusiastic about the system. The final testing place of any new technique is the battlefield and there the target grid came through with flying colors. Official observer teams in Korea asked the question of unit commanders and S3s; over 90 per cent favored the system over previous methods and had no adverse comments. They have not found, as Captain English alleges, that the target grid slowed up delivery of fire. Forty-five officers now on duty at The Artillery School who have recently returned from Korea have been asked the question; all but two favored the target grid.

As to the statement: "There was a feeling among some artillery commanders that a knowledge of Change 2, FM 6-40, 1945, would materially help observers and FDC personnel to more fully understand artillery gunnery," I would like to point out that the division artillery which originated that thought (the return to the old BC method) has since changed its stand and now supports the target grid.

Now, let's take a look at the precomputed charts. First, it appears that Captain English has made a "horseback guess" as to the number of charts involved. A chart for each 100 mils angle T is insufficient; a chart for each 50 mils angle T is slightly inaccurate whenever angle T exceeds 600 mils. FDC should give the observer what he asks for, not an approximation. Also, if the observer

makes a mistake on his initial azimuth, how would the computer know which chart to change to? In spite of the double handling of data by chart operator and computer in our present procedure, we believe it is easier and more flexible than precomputed charts. As the article entitled "The Rizza Fan" in the November issue indicated, we're looking for better FDC procedures using the target grid. The Rizza Fan is one of several solutions now under development.

Captain English pointed out that in adjustment of air missions, the computer could handle the observer's corrections mathematically. I concur, provided the air observer can sense along the GT line. This situation is generally true with our organic liaison-type planes. However, our system must also work with high-performance type aircraft wherein the pilot usually adjusts parallel to a line he can actually see—such as a railroad, river line, or road.

In conclusion, the target grid does what it was designed to do: simplify the observer's job. At the same time, the procedures within the FDC do require improvements. New techniques and gadgets are definitely worth while if they simplify operations or reduce errors.

LT. COL. R. T. BOWIE
Artillery

Run With Your Equipment

The captain breathes heavily as he jogs across the drop zone, but it is the easy breath of a man in good condition. Changing hands with his carbine, the captain tugs at his combat loaded pack to ease the chafing. He decides to walk the rest of the way to the battalion assembly area. The ground is sandy and the extra combat equipment is beginning to tire him.

The captain smiles to himself. His rifle company will be the first assembled. The first company assembled, the first company to move out, and the first company to take the objective. This time battalion will sit up and take notice. For this problem the captain had trained his company in athletic shorts and sneakers. During every duty day of the last month they had run thirty minutes.

Even now, indistinctly through the red and green assembly smokes, the captain made out one of his 57mm recoilless crews double timing toward the assembly area. Good men! They have their equipment containers located and unpacked, and the crew assembled all in four minutes. Only a few of the riflemen and none of the company's heavy equipment men are in yet. And that 57mm crew jumped way down the DZ.

HALT!

Changing station? A lot of soldiers are on the move these days. If you are one of them don't forget to notify us of your change in address. Simply send us your name, old address and new one. Better yet clip this coupon and mail it.

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But when the crew come nearer he sees that they are not his men! They are a 75mm crew from Heavy Weapons.

The 75mm crew is almost on him now, and the captain's sharp eyes notice that the crew runs as a team with lightly loaded extra men following behind those carrying the recoilless rifle, and how each extra man moves up, without a signal, to relieve his comrade when the carrier becomes fatigued. The crew pants by, far ahead of most of the captain's riflemen.

The captain glances uneasily at his watch and then shouts at the first sergeant to see how many men are assembled. Ten minutes! And those damn Heavy Weapons people are beating in his lightly loaded riflemen. A clipped order sends two noncoms out to prod those walking riflemen into a trot.

Five minutes later, when his rifle company is still only half assembled, the captain hears Heavy Weapons report into the battalion radio net as assembled, one hundred per cent effective except for minor jump casualties.

The captain can't understand why he didn't have the "fustest" company. The blame could hardly lie in the fact that he didn't work his men hard enough. But then he remembers how tired he became running in that soft sand and how he rationalized himself into walking those last fifty yards into the assembly area. Certainly he can't blame the men for doing what he did himself.

And then the captain began to understand why he had failed. There is all the fatiguing difference in the world between running five miles on a hard road, dressed in athletic shorts and sneakers, and running even half that distance over drop zone terrain, loaded and clumsy with equipment. The captain's riflemen trained like college athletes, but Heavy Weapons had trained like practical soldiers. Both companies are in good condition. But to do a soldier's job, the Heavy Weapons Company is in better condition. So then and there the captain decided to change his training method. From now on he'd run his men with their equipment. And in doing that he learned a lot.

He learned that before you double-time your men with weapons, the men must be in shape to make ordinary runs without equipment.

He learned that crew-served weapons are most difficult to carry while on the double, and weapons people need practice in running with their loads so that they can keep up with the rifle elements. And to keep up with the rifle people, the weapons men have to be in better condition that the riflemen.

He learned that at first these weapons teams should run with only a single piece of their weapon, like a base plate, and pass it among them as they jog, so that each man will learn the best way to carry it. Eventually the team practices running with more and more parts of the weapon until they finally carry their entire load, plus their individual weapons, on the run.

He learned that he and his lieutenants and noncoms had to make sure no one man carried the load too long. Set a time limit, or any other method, to keep the men from straining themselves. Also the leader must watch for the deadbeat who doesn't do his share.

He learned that it was necessary to pad most of the pieces of equipment. The government issue pads are good, but if not available, field expedients of rags are all right.

He learned to schedule his runs in the morning when the air was cool. He gave the men time to take a shower after the run. Some units plan their runs before breakfast, and allow for shower time before eating.

He learned that in hot weather the best uniform for running was athletic shorts. Shorts are more sensible and comfortable than fatigues. Fatigues can be worn on cross-country trots when protection from brush scratches is required.

He learned to have the platoon with the heaviest load set his pace up front. Usually in a rifle company this is the weapons platoon. This keeps the company from outdistancing the crew that has the hardest job.

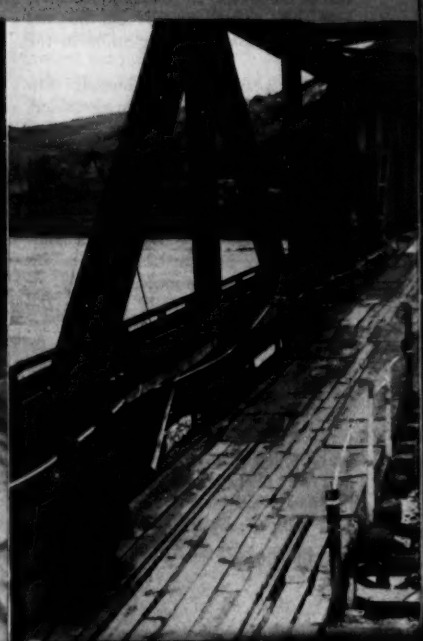
He learned to stash away his carbine and take his own turn at every piece of equipment in the company. He let his men see him doing it. He would run the same time interval as his men and was relieved by the next man.

LT. BOYD T. BASHORE
Infantry

"A Fallen Comrade"—first prize in Department of Defence combat photography contest won by Sergeant Al Chang, Signal Corps, with this picture from Korea.

President Truman congratulates two Medal of Honor winners: M/Sgt Hubert F. Lee and Sgt/1cl Joseph C. Rodriguez. ↑

This is a model of the "Skysweeper," much talked of antiaircraft artillery gun that is almost the last word in automatic devices. It was shown to Congressmen.



Seven years ago: Remagen bridge over Rhine captured, 7 March 1945; collapsed 17 March ↓

★ FRONT and CENTER ★

THE COMBAT ARMS IN NEWS AND PICTURES

Defense Budget

The President's defense budget for Fiscal Year 1953 compared to Fiscal Year 1952:

	1952	1953
	(in billions of dollars)	
Office, Sec. of Def. . . .	.5	.5
Army	20.9	14.2
Navy	16.0	13.2
Air Force	22.1	20.7
(To be asked later) . .	1.5	3.5
Stockpiling & other military expenses . .	.7	.3
Totals	$61.7	$52.4

Of the $61.7 billions authorized for 1952 only about $39.8 billions have been or will be spent during the present fiscal year. In fiscal 1953 it is expected that actual expenditures will be about $51.2 billions.

The budget calls for an Army strength of 1,500,000, a little smaller than its present strength of 1,580,000. It will be authorized 20 combat divisions with a target of 21 divisions in 1954. An effort will be made to increase the strength of the ORC and the National Guard.

The Navy will increase in strength from 790,000 to 835,000; the Marine Corps from 217,000 to 242,750; and the Air Force from 890,000 to 1,051,000. The Marines will have three combat divisions.

The biggest part of the military budget allotted for procurement will go into aircraft. It is expected that $11 billions will be spent in fiscal 1953 for aircraft ($14.1 billions authorized) as compared with about $5.8 billions in fiscal 1952 ($14.9 authorized). How many aircraft will be obtained in these two fiscal years is classified. Certainly by July 1, 1953 the services will have a great many more aircraft than they have now and the Air Force should be well on the way towards its goal of 143 wings in the next few years.

Combat Pay

Combat pay for veterans of the Korean conflict was introduced into the Congress more than a year ago. But so far very little action has been taken. Secretary of the Army Frank Pace, Jr., General J. Lawton Collins, the Chief of Staff, and others testified in behalf of the legislation a year or so ago. But nothing happened during that session of Congress.

Hearings will be resumed during this session; when is not certain. Obviously the bill, which would pay $100 a month to officers and $50 a month to enlisted men of the combat arms who were in actual combat six days or more in any month, still has a long way to go before it becomes law.

Also it does not provide for combat pay in all future conflicts, being applicable only to Korea. A permanent law is needed.

Collins on Armor

The postwar tendency to "amalgamate" armor and infantry divisions "so closely as to lose the designation of 'armored division'," is at an end, General J. Lawton Collins indicated in an address to the members of the U.S. Armor Association at Fort Knox, Ky.

"I know of no new weapon or concept which will lessen our need for armored units," he said as he described the work of the Army's Armored Panel in pushing the development of the new "family" of tanks.

Deficiencies in the new light and new medium tanks are being corrected, he said. The new medium tanks are being tested at Camp Irwin, California, and the light tanks at Fort Drum, N. Y.

Despite all of the trouble there was in design, production and working out the "bugs" in these new tanks the Army is "still a year ahead of the time schedule [it] would have been had we waited for complete test and development before going into production," General Collins said.

Korea, he said, "has proven again that our concepts and doctrines are sound. Our experiences there have confirmed the need for organic armored units within our infantry divisions."

INFANTRY

Fort Benning

Rangers

Realism and ruggedness have been added to the eight-week Ranger training course. Half of the eight-week period is spent in the field—two weeks in the Big Smokies, near Dahlonega in north Georgia, and two weeks on the Gulf coast at Eglin Air Base, Fla.

In the Big Smokies the Rangers will practice mountain climbing and learn to exist on the country, killing, cleaning and cooking their own meat and building their own shelters. Patrolling is emphasized. Trainees will plan and perform their own patrols under the watchful eye of the instructors.

OUR ARMY IN HISTORY: *Uniform regulations of instruction for Regular Army and militia ordered by General Winfield Scott, 6 March 1845. City of Vera Cruz, Mexico, fell to General Scott's Army, 29 March 1847. Signal Corps established, 3 March 1863. Geronimo surrendered, 21 March 1886. Army reorganized into Ground, Air, and Service Forces, 2 March 1942. Ludendorff Bridge at Remagen, Germany, captured by 9th Armored Division, 7 March 1945.*

★ Irons in the Fire ★

A new boot to keep the feet warm in 20 degrees below zero has been undergoing extensive testing by infantry troops in Korea. The rubber combat boot employs the "vapor barrier" principle which traps inner perspiration and keeps it warm at body temperature. The upper portion of the boot, a half-inch wool fleece liner, fits snugly about the leg and prevents heat from escaping. The boots can be worn in warmer weather without discomfort. Quite light in weight, the boots have a built-in steel arch support for added comfort.

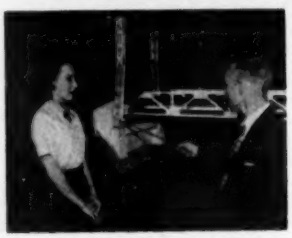
Bulletproof vests have been used successfully on the Korean battlefield in recent weeks. These chest protectors are designed to safeguard soldiers from bullets and shell fragments. Members of the 35th Infantry who have tried the new vests report that grenade fragments bounce off of them with no harm to the soldier. Quite aside from their safety factor, the soldiers using them report that they have an excellent psychological effect in giving an added sense of security.

New 2½-ton workhorse

New two-and-one-half-ton truck, equipped with hydramatic drive, is now coming off General Motors production lines. It was designed by Ordnance Corps and is rapidly "adaptable" to arctic, desert or "swimming." Weight exceeds 6½ tons. The hydramatic drive is expected to shorten driver training time.

A new model Jeep will go into production soon. Among the new features to be included are 72-horsepower engine, five-inch longer body, one-inch longer wheelbase, softer seats, and better springs. Schnorkel tubes can be installed on the new model in about 15 minutes, which will permit the jeep to run submerged.

Model line of communications bridge constructed at the Engineer Research and Development Laboratories, Fort Belvoir, Va., is used to check construction and design difficulties and to train engineer troops in proper methods of erection.



Model bridge

The first successful de-icing system for helicopter rotor blades has been announced by Bell Aircraft Corporation. The de-icing system is operated electrically and consists principally of rubber "boots" (wire embedded in neoprene) running the entire length of the main rotor blades and covering about one-third of the surface. The system has already passed extensive tests in all types of sub-zero conditions.

The British Navy has come up with a high performance catapult capable of launching the most modern carrier-borne aircraft. Soon to be demonstrated in the U.S., the new catapult is steam operated and has no rams or hydraulic purchases. The hook to which the aircraft is connected is directly attached to a piston driven along a cylinder by high pressure steam from the ship's main boilers. Over one hundred and twenty-seven aircraft have been successfully launched with the new device.

An airborne jet starter, the world's first, has been successfully produced by the Bendix Aviation Corporation. Operating completely free from ground crews and ground equipment, the new airborne jet starter is only about the size of a standard typewriter and weighs but 75 pounds. This small mechanism packs 380 horsepower, or more than two Cadillac cars, and completes its starting job in three and one-half seconds.

Marines

More than a hundred Marines are enrolled in various Infantry School courses. Ninety-nine are taking the automotive maintenance course, ten are in jump school learning to be paratroopers and others are attending the Third Army Food Service School. Thirty-five more Marines are scheduled to enter the jump school during the next few months.

Demonstrations

Three-man teams of Korea veterans visit ORC and National Guard units to display captured Communist weapons and describe the tactics of Communist forces in Korea. They also pass on the latest developments of the Infantry School.

Students & Allies

The number of foreign officers enrolled at the Infantry School spurted to an all-time high of 290 shortly after the first of the year. Altogether 25 countries were represented by officers or enlisted men.

Countries represented were: Canada, Mexico, Guatemala, El Salvador, Cuba, Colombia, Denmark, Norway, England, Portugal, Spain, Haiti, Netherlands, Italy, France, Switzerland, Iran, Turkey, Thailand, Philippine Islands, Republic of Korea, Indonesia, Brazil, Greece and Belgium.

Previous record registration was 270 Allied students.

ARTILLERY

Fort Sill

Gunnery

Technique Survey. Drs. Benjamin Schohan and Joseph Deutsch of the Educational Research Corporation, Cambridge, Mass., visited TAS recently in connection with a Department of the Army project to survey marksmanship and gunnery training requirements. The purpose of this project is to determine how to improve training and to curtail expenditures of training ammunition by using existing aids and developing new devices.

Communication Experiment. TAS is considering a change in the artillery battalion communication net that will utilize the new family of radios and improve communications between the FDC and other gunnery elements of the battalion. A proposed system, which includes a switchboard in the FDC, soon will receive partial field testing and be evaluated.

Closely Observed Fire. In order to create more realism in practical instruction, the Department of Gunnery is using splinter-proof dugouts for a special service practice during which student-observers adjust fire within 300 yards of the OP.

New GFT. The Department of Gunnery has completed designs and drawings for experimental graphic firing tables for the 60mm and 81mm mortars. These GFTs, known as the T7 and T8, are six inches by one inch, as compared with the standard

size GFT of twelve inches by two inches. Field tests on the T7 and T8 will be conducted by AFF Board No. 3 at Fort Benning, Georgia.

Survey Film

Copies of the orientation and familiarization training film on *Artillery Survey*, which has been in production since 1949, are now being distributed. This film, TF 6-1657, depicts in animation and live scenes the complete operation of a field artillery battalion grid sheet survey.

Assistant Commandant

Brig. Gen. James F. Brittingham, I Corps artillery commander in Korea, has been named assistant commandant of TAS. General Brittingham succeeds Brig. Gen. William H. Colbern who was ordered to FECOM.

ORC Schools

Fifty-seven new Field Artillery ORC schools began the first year of their three-year training cycle in January. This makes a total of 102 Field Artillery ORC schools operating in major cities throughout the United States. These schools, meeting the enrollment requirements, offer both the Associate Field Artillery Battery Officers Course and the Associate Field Artillery Officers Advanced Course. The first 45 schools, activated in January 1951, are now in their second-year cycle.

MOS Subject Schedules

Work will soon start on the preparation of subject schedules for training personnel assigned to the artillery career ladder. Directed by OCAFF to write these subject schedules, The Artillery School will base them as much as possible on the Army Field Forces program of instruction.

Tests or suitable practical exercises will be made integral parts of the MOS subject schedules which will be prepared for use by all components of the Army. The subcareer fields from which they are to be prepared are listed in SR 615-25-15. It is expected that these subject schedules will not be ready for distribution before fall.

Helicopter Courses

Personnel from the instructional section of the Department of Air Training are attending maintenance instruction courses at several helicopter factories. While some training has been done previously at the Bell Aircraft Corporation, Buffalo, New York, instructors and mechanics from The Artillery School are now getting experience for the first time at the Piasecki Helicopter Corporation, Morton, Pennsylvania; Hiller Helicopter Company, Palo Alto, California; and Sikorsky Aircraft, Bridgeport, Connecticut.

The courses average about four weeks. Additional mechanics and instructors will attend future courses at these factories to keep the Department of Air Training

★ Battle Tips ★

PLATOON LEADER'S LOAD

GOING to Korea, Lieutenant? If so, chances are you'll be rifle platoon leader. In the fifteen months I spent in Korea, new platoon leaders always asked, "What equipment do I need?" Then when they find out, they ask, "Where do I carry all this stuff?"

Here are suggested answers to both questions. [Those items marked with an asterisk (*) are vulnerable to moisture. I suggest that they be placed in the water-resistant transparent plastic envelopes you find in individual assault rations.]

In your shirt pockets: fountain pen, automatic loading mechanical pencil, stiff-backed pocket notebook*, toilet paper*, cigarettes*, steel mirror, and spoon.

In your trousers pockets: maps*, cigarette lighter, jackknife, can opener, handkerchief, water purification tablets, wallet for military payment certificates, calendar card, identification card, and immunization record*; and wallet for foreign currency.

In your field jacket pockets: dry socks, bore cleaner, gun oil, patches, pistol cleaning rod, toothbrush (for cleaning equipment), and rations.

On your pistol belt: pistol with holster and full clip of ammunition, compass with pouch, field glasses and case, two full clips of pistol ammunition with pouch, canteen with canteen cup and carrier, and first-aid pouch and packet.

Attached to the outside of the upper pockets of your field jacket: fragmentation grenades, white phosphorus grenades, and colored smoke grenades.

Your sleeping bag with its protective cover, a bath towel, and a cloth bag of toilet articles can be placed in a poncho and rolled into an envelope. A carrying sling can be made with tent rope. The cloth bag of toilet articles might contain: cuticle scissors, comb, fingernail brush, small sponge, hard water soap in metal box, razor and blades, shaving brush, tooth powder, and toothbrush.

You'll need a good wrist watch with unbreakable crystal, sweep second hand, and luminous dial.

Finally, a pair of taped identification tags on a sturdy chain hung around your neck.

In combat, you'll ask yourself continually whether or not this or that item is really necessary. You become gadget-conscious. There are quite a few conveniently small articles with many good uses, such as a fine pair of cuticle scissors which will do a precision cutting job on everything from paper to your toenails.

The pistol, although it is not T/O&E equipment for a platoon leader, is light and ideal for hill climbing and ready use at close quarters. Your equipment should keep you mobile and effective; it's as simple as that.

Such a list as this can only be a guide. You'll soon have ideas of your own. Good luck!

LT. GEORGE L. ROBSON, JR.
Infantry

abreast of the latest developments and newest equipment in the helicopter maintenance field.

Extension Courses

Revised Courses. Subcourse 30-20FA, Field Artillery Meteorology (Revised) became available to extension course students the latter part of February. This revised edition teaches the latest methods of determining weather corrections for artillery. It also includes instruction on new equipment for obtaining weather data.

Two subcourses in the field of Army aviation are being revised. These subcourses —30-21, Meteorology for Army Aviation and 40-20, Employment of Army Aviation —should be available in May.

Subcourse 40-10, Field Artillery Tactics, General (Revised) is being printed. It will be available in March. The Department of Extension Courses anticipates a great demand for this revised edition, so get your request in early.

Enrollment Rise. Student activity in extension courses is showing a steady rise. The Department of Extension Courses graded approximately 100,000 lessons during 1951. This is a substantial increase over previous years. In 1949, 68,000 lessons were graded, and 95,000 were graded in 1950.

TRANSPORTATION CORPS. An aerial transportation course at the TC Training Center, Fort Eustis, Va., will train officers and noncoms of all branches of the Army. The course will include aircraft familiarization, flight rules, safety regulations, technique of loading and stowing, weight and balance computation, and troop carrier and aerial port cargo operations. ¶ The first of the 97 H-19 cargo helicopters has been delivered to the Army Field Forces Board at Fort Bragg, N.C., for testing prior to being turned over to a TC Helicopter Company for service use. ¶ In an effort to save manpower and speed shipments abroad the TC recently inaugurated the shipment of loaded cargo trailers to overseas points. Trailers are loaded at the supply point, warehouse, or factory and trucked directly to dockside where they are lifted aboard freight vessels as deck cargo. Unloaded overseas, they are trucked to an unloading point and then reloaded for return to the States. TC thinks "VANEX"—as they call it—will speed shipments of spare parts and will expedite the movement of valuable cargo and completely assembled units of equipment.

QUARTERMASTER CORPS. Field tests of Army uniforms are going on at such distant places as Fort Drum, N.Y., and Mt. Washington, N.H., where winter clothing is getting a workout, and at Fort Sherman, C.Z., where tropical combat boots and clothing are being experimented with by a Quartermaster Board team.

ORDNANCE CORPS. At Fort Knox, Ky., an Army Field Forces Board is testing stripped-down Army trucks to see if they can perform necessary jobs without the "extras" normally found on today's issue vehicles.

FINANCE CORPS. Hard up for company grade officers, the Finance Corps announced it would welcome the voluntary recall to duty of Reserve officers.

SIGNAL CORPS. The consolidation of its Procurement Agency with its Stock Control Agency into a Supply Agency will save money and manpower, the Signal Corps announced. The new Agency will have its head offices in Philadelphia. Field offices will be maintained in New York, Chicago and Los Angeles, a laboratory at Fort Monmouth, N.J., and a photographic office at Long Island City, N.Y.

CHEMICAL CORPS. Chemical, biological and radiological weapons "which we have under development may provide an opportunity at the smallest logistical cost to reduce an enemy's ability to resist and thereby to obtain victory without the destruction of his economy," according to Brig. Gen. William M. Creasey, CG, Chemical Corps Research and Engineering Command. Major efforts are being made to develop protective measures and detective devices against C-B-R agents, he added.

NAVY

Destroyer-Leaders

In the next few months the Navy will launch four Mitscher class destroyer-leaders, a new class of ships, considerably larger than regular destroyers. They are expected to greatly increase the Navy's ability to fight enemy submarines.

Each of the ships will cost $29.5 millions, excluding ordnance. They are 493 feet long and have a 50-foot beam. Their speed will be in excess of 30 knots. The crew will consist of 350 officers and men.

The USS *Norfolk*, launched in December, is a larger type of destroyer-leader than the Mitscher class. She displaces 5,500 tons, is 540 feet long and has a 54-foot beam. Her crew consists of 440 officers and enlisted men.

AIR FORCE

Defense Command Reorganized

The Air Defense Command announced a reorganization designed to save "$2,000,000 annually through economies in manpower." Combat wing and combat group headquarters will be eliminated and replaced by a "limited number of small administrative wing headquarters" which "will direct the administration of more fighter-interceptor squadrons than a combat wing headquarters does now," the Air Force said. Also "housekeeping" groups will be eliminated or reduced in size with support squadrons performing "housekeeping" duties.

Port Squadron

The Air Force's recently activated 1st Aerial Port Operations Squadron at Donaldson Air Force Base, Greenville, S.C., participated in Exercise Snow Fall at Fort Drum, N.Y. The mission of the squadron is to load supplies into aircraft, secure the load, and deliver it by air landing paradrops or free drops. Key men in the squadron were trained by the 82d Airborne Division.

SHORTS

¶ Maj. Gen. Henry I. Hodes is the new Commandant of the Command and General Staff College, replacing Maj. Gen. Horace L. McBride. Gen. Hodes had been commanding the 24th Infantry Division in Korea.

¶ A new integration program to bring nonregulars up to the grade of major into the Regular Army is under consideration. The proposal aims at integrating a small number of officers from time to time. Legislation would be required.

¶ In the last 18 months 2,200 National Guard enlisted men have completed the 10- series of home study courses and have been commissioned in the National Guard. Also four states are operating federally recognized officer candidate schools for enlisted Guardsmen.

¶ Colonel Richard P. Ovenshine, who commanded the 31st Infantry in Korea for a time, has replaced Colonel L. A. Diller as the officer in charge of the Infantry Branch, Career Management Division. Colonel Diller is going to EUCOM.

¶ Secretary Pace is beating the drums for an Army song that will be as popular as "Anchors Aweigh" and other service songs. He is interesting popular song writers in the project and recently song writers Oscar Hammerstein, Irving Caesar and Samuel Stept visited Fort Benning to get "atmosphere."

¶ Adoption of the "physical profile" system as a yardstick to measure applicants for commissions was announced by the Army. It will also be helpful, the Army believes, in determining proper assignments for officers.

¶ The Army plans to call to active duty all ROTC students who will receive reserve commissions this spring and summer; only exceptions will be veterans who served more than two years during World War II and students who have not completed their academic work and are still in college. Special regulations affect officers commissioned in the Medical, Dental and Veterinary Corps.

¶ The Armed Forces Reserve Medal, awarded for "honorable and satisfactory service" was given to two generals and two enlisted men by Secretary of the Army Pace. They were the first soldiers to receive the medal. Honored were Maj. Gen. Julius Ochs Adler, Commanding General, 77th ORC Division; Maj. Gen. Jim Dan Hill, Commanding General 32d National Guard Division (Wisconsin); M/Sgt. Lewis Kefauver, a member of the 340 Antiaircraft Artillery Bn., District of Columbia National Guard; and Sgt. George F. Tucker, Washington, D.C., reservist who served in Korea.

★ BOOK REVIEWS ★

FAIR APPRAISAL OF MacARTHUR

DOUGLAS MacARTHUR. By Clark Lee and Richard Henschel. Henry Holt & Company. 370 Pages; Illustrated; Index; $6.00.

It's time we had a reasonably complete and undistorted life of General MacArthur and this is the nearest to it so far. The authors know a lot about the man they describe, they write of him warmly and make of him the remarkable flesh-and-blood person he actually is, rather than the artificial stiff-natured person some writers have depicted him as being. Lee and Henschel show him to be a great and able leader, and they show it so thoroughly and clearly that even those who disagree with the General's political viewpoint and his general world view must feel the degree of his greatness.

That has been the point to be regretted all along—that there should be a tendency on the part of a lot of people to deny Douglas MacArthur's vital and constructive accomplishments, both military and administrative, because they happen to disagree with him.

These authors do largely agree with him but make no big point of it. They cover his whole life story with such competence and in such interesting detail that the man is made clear as an admirable American servant of his country. There is a lot of new material here, though not as much as should some day appear in the two- or three-volume biography that will be needed for a truly adequate job. But no future biographers will do a better job of telling the General's life in pictures. Mr. Henschel has assembled several hundred illustrations which are well arranged with well-done captions in a section of 128 pages. Both text and picture life are good, but those who especially admire the General as a great American will be drawn to the book by this splendid picture section.

I should not, however, give the idea that the book is devoid of criticism. Lee and Henschel have little admiration for certain members of General MacArthur's staff, and they make a few other strictures, though their tone is generally a justly admiring one. They also go into several of the adverse legends which have sprung up about the General and present thorough proof of their falseness.

This is the best MacArthur book yet. It has the most in it by far. The book is particularly full in its information on the MacArthur family life—an aspect of the General's life that contributes much to making him a well-loved figure, except by those who have frozen their minds against him, and have wished to keep on believing the untrue tales circulated freely and for long about him. It is the most accurate, despite indications that the authors do not know too much about the inner workings of the Army. And it is very readable in the justice it does to one of the most brilliant officers the U. S. Army ever produced. —G. V.

KAHN ON KOREA

THE PECULIAR WAR. By E. J. Kahn, Jr. New York: Random House. 211 Pages; $2.75.

E. J. Kahn, Jr., who has been a soldier and knows enough of the technique of armies to write expertly of operations, has done a peculiar book on this peculiar war, and maybe that's what makes it something especially good.

This slender volume should still be worth-while reading many years hence to anyone who loves a well told tale and admires the patience with which a skilled reporter sets about organizing facts so that they will at one time inform and entertain.

But the book is peculiar because, strictly speaking, it isn't a book. Rather, it is a collection of monographs or essays, on a great variety of topics, some only indirectly related to the Korean fighting and the ordeal of the Korean nation.

There is no central theme. Kahn isn't interested in explaining the war, analyzing operations, or airing his views on policy. Nor does he take the other tack, writing of a personal experience in that breathless "I saw it with my own eyes" manner which curses the work of a majority of present-day correspondents.

This reviewer got the impression that Kahn went to Korea with one main object —to pick up a good yarn wherever he could find it, and write it for its own sake. That would seem like a common sense rule for anyone who is taking a look at war, or for that matter, any other activity with an almost unlimited horizon. But to practice it in this day is, well—peculiar.

None the less, in its total effect this small book achieves body, flavor, and zip, as a beer maker might put it. Without seeking to inform the reader, or seeming to strive for unity in his work as a whole, Kahn's thoughts, experiences, and impressions somehow comprise a pretty fair roundup of the war's problems and undertones. He writes easily, but his use of language is precise, and he never gets off-key when he is speaking of soldiers, their habits, outlook, group character, and conversation. The preeminent value in the book, however, is that it has accented so many things of major importance which other writing men in the Theater have failed to convey to our people.

For example, there is an effective chapter on the nature and organization of the ROK Army and of the work of the American mission (KMAG) assisting it. Because the Korean divisions seem to fold every time the Communists loose a Sunday punch, and because American high commanders tend to speak disparagingly of the Korean individual as a fighter, there is much short selling on this subject. Kahn visited the eastern flank, which is exclusively an ROK sector except for offshore support from the American Navy, and discovered for himself that these divisions lack artillery and heavy weapons, and are pretty much unhelped. Our men, in their situation, would hardly do better.

There is also a splendid chapter on the felicitous relationships between the Allied forces within the Eighth Army—so far as I can recall, the first time that any correspondent has pointed out that the United Nations components get along better, both on an official and man-to-man basis, than any coalition force has ever done in war. That is simply the fact, and it is really too bad that so little attention has been directed toward it.

Kahn spent but three months in Korea, as a correspondent for *The New Yorker*. Whether his choice of assignments was his own or his editor's he seems to have spent most of that time rummaging around in the backwash of the war, trying to find out how millions of Koreans manage to live with most of their country shot out from under them, what happens to a great city like Seoul when it becomes depopulated and repopulated several times in the course of one year, what an average Korean farmer thinks about Communism and democracy, how the U.N. agencies function, why the level of health in Korea remains high, and whether it is true that CCF prisoners are artists at converting American beer cans into something beautiful.

There are several character studies in this volume done to the hilt. Kahn leaves the celebrities—the great names—to other hands. He picks out average good men and then writes about them in such a way as to prove the point that any life is a great story if one will but dig deep. The two subjects he chose are Capt. Fredric F. Champlin, a P-80 pilot, and Sergeant First Class Joseph P. Reeves, a typical fighter from the 27th Infantry Regiment.

Only two chapters are given to front-line operations, and it is quite likely that the first of these, with which the book opens, will be appreciated more by soldiers than by laymen. It is strangely devoid of blood and thunder. Kahn accompanied a task force. Much weight in armor rolled forward, accompanied by many men. The enemy was more or less located. At long range there was considerable potshooting back and forth. Nobody was hurt very much. In due course all hands withdrew. Nobody seemed certain what was attempted or exactly what had happened. At higher levels the several interpretations were 180 degrees apart. Kahn tells all of this from the view of one witness, in the way that a private soldier might have looked at the action. Many an ex-private soldier, and some of higher rank, will read this account and comment: "A typical day at the front."

This can be contrasted with the epic of the destruction of the "Gloster" Battalion

Off-Duty Reading

Gunther on Eisenhower

GENERAL OF THE ARMY DWIGHT D. EISENHOWER has been a figure of world-wide importance for the last decade. This year may see him elected to the Presidency. Whether he is or is not nominated and elected, he will be written about and read as never before; he will be extolled and he will be smeared. For these reasons, I believe that John Gunther's *Eisenhower* (Harper; $2.50) is one of the most important books of the year. It is not in any sense a full biography, but it is the sane, reasoned appraisal by an astute reporter of Eisenhower as a man and as a world figure.

Gunther first looks at Eisenhower as a human being—talks about his personal habits, likes and dislikes, how he works, his mental habits, relaxation, his relations with the men close to him and with the press. He describes Ike's background, career, his present work at SHAPE, and his possible future.

The quality of this book is not, I think, in *what* Gunther has to contribute to the Eisenhower story, but rather in how he has taken his own observations, and the observations and writings of other men, and put down on paper a picture of the whole man. Gunther admires and respects Eisenhower tremendously, but he is not blind to his weaknesses, which are few but nevertheless real. He was not, for instance, spectacularly successful as President of Columbia University, thought the fault was only partly his.

Here in short, is an honest book about a man who is important to every citizen of the United States. I hope every citizen reads it *before*, not after, the political machines begin grinding out baloney.

I'M not entirely sure from the book just *who* first unearthed the letters which make up *The Letters of Private Wheeler* (Houghton; $3.75), but at any rate Capt. B. H. Liddell Hart has edited them and checked their authenticity. Wheeler was a private in Wellington's army, fought through the Napoleonic Wars, including Waterloo, and had a keen sense of the sights and sounds of battle. He also had an ear for a good story and an excellent sense of the vagaries of officers and other gentry.

All this adds up to a very superior account of the Napoleonic Wars from the point of view of a competent combat infantryman with a strong loyalty to his regiment and damned few illusions. It is surprising how fresh and pertinent Wheeler's letters are to modern war. Today's officer can learn something from Wheeler's comments on leadership, in battle and in garrison. We can draw one very valid conclusion from these letters if we get nothing else from them: warfare has changed in the last 125 years, but soldiers haven't.

IN *Victory Also Ends* (Rinehart; $3.50), the war novel somebody was bound to write, Fred W. Booth, a former rifle company commander of the 91st Division, has done a very fine job. This is the problem of a rifle company commander —a fine combat man—who lacks the moral courage to get rid of a weak platoon leader. Ordinarily there would have been no problem, but the captain—through bad judgment on his part and a single act of magnificent courage on the platoon leader's part—has made this man a hero. Because he is incapable of facing his superiors and admitting bad judgment, the captain is forced to cover for his platoon leader more and more often until finally the man breaks in combat and the captain is killed.

Incidental to the main story, though not to the excellence of the book, is the fact that it is a vivid and accurate picture of infantry combat during the latter part of the Italian campaign.—O. C. S.

from the British 29th Brigade in the fight north of Seoul last April. About two score of the Glosters finally escaped the trap because of the enterprise of an attached officer who decided to lead them north through enemy country before heading toward his own lines; the others died or were captured in the cause of King and country. Their four-day trial by fire is described from the viewpoint of the survivors. There are few finer stories of British courage in print than this one, and it is told with the restraint and respect which the facts command, and with proper emphasis on that greatly steadying force in a British soldiery—the Regiment's tradition.

Kahn's droll sense of humor has thus far gone unmentioned, but it is his ability to see the whimsy and tomfoolery in war which makes his work delightful. Remarque, Blunden, Latzko, and many others wrote of it in a dull monotone, which is contrary to nature, and it has always seemed odd to me that the critics overlooked these distortions. How much preferable is a passage such as this one: "One grimy GI was told the news [of the peace talks] as he came in off a patrol, and asked if he planned to celebrate. 'If I get some beer, I'll celebrate,' he said. 'I always find something to celebrate when I get beer.'"

This is by way of saying that having read Kahn on Korea, I found that the situation called for a cold bottle.—COL. S. L. A. MARSHALL in *The Saturday Review of Literature*, Jan. 12, 1952. Copyright, Saturday Review Associates. Reprinted by permission.

TALKERS AND TEACHERS

COMMAND VOICE. By Captain Richard W. Sharretts, USAR. Military Service Publishing Company. 110 Pages; Illustrated; Index; $1.50.

THE MILITARY INSTRUCTOR. By Lt. Col. Edward E. Pickard, Ed.D, USAR. Military Service Publishing Company. 369 Pages; Illustrated; Index; $2.75.

Many of us when giving out a certain oral drill command wonder why that jerk in the middle rank invariably begins to execute a different movement. We attribute his failure to inattention or even stupidity, not realizing that even our stentorian bellow may not have been understood. Not all sounds are interpreted the same way by all men. For example, a Georgian drillmaster's enunciation can be confusing to a New Yorker. Captain Sharretts's method goes a long way toward solving the problem, and *Command Voice* is what the publishers say it is: an instructor of drill instructors. Well written and illustrated, sometimes humorously, it will teach you to enunciate commands so that you can control your troops without straining your voice, with vigor, and with less physical effort. The Military Academy has adopted the author's system.

Colonel Pickard, educational advisor at The Engineer School, aims *The Military Instructor* at the lecturer and classroom teacher. Beginning with fundamentals like physiology of the speech mechanism and

application of speech technique, it goes on up into methods of instruction, the mechanics of thought, lesson preparation, lecture skills, conduct of demonstrations, conferences and tests, grading, supervision of instruction, and other details of the instructor's jobs.

The scope is much broader than that of the official manuals. Some sections, like the one describing mechanical functioning of the brain, are in language too heavy for most people, and could just as well have been reduced to everyday English. But those parts can be skipped with no loss, and do not detract from this deeply studious work that treats of all phases of proper instructing technique.

Unless I overlooked it, one item is lacking: how to dispose of the chronic, bright-eyed questioner or the experienced, old-timer-heckler. Although even the official manuals ignore these birds, we can't rationalize by denying they exist in our services. Sooner or later an instructor encounters them, and he must know how to dispose of them prudently yet effectively.—N. J.A.

CANADIAN RECORD

SCIENTISTS AT WAR. By Wilfrid Eggleston. Oxford University Press. 291 Pages; Illustrated; Index; $4.00.

With the publication of *Scientists at War*, the story of the Canadian National Research Council, the returns are in on the western scientific effort of World War II. We already have *Science at War*, by Crowther and Widdington, covering the English experience, and *Scientists Against Time*, by J. P. Baxter, a summary of the monumental series of volumes describing the work of the U.S. National Defense Research Council.

The three books have much in common. This is not surprising since the British, Canadians, and Americans were facing similar problems. Moreover, the British scientific mission of September 1940, headed by Sir Henry Tizard, worked wonders in securing an integrated effort with a full interchange of information, reports and even personnel. The results of this scientific collaboration were felt from El Alamein to Hiroshima.

Scientists at War is an account of the Canadian contribution in radar, the proximity fuze, high explosives, atomic energy, and the whole gamut of less publicized but highly important projects in medicine, logistics, and military equipments. Some of the stories already told in the English and American reports are briefly retold, with stress on Canadian aspects.

One of the most important observations of this and its companion volumes is that a military need must be anticipated by five to seven years if the weapon is to be brought through from research to the operational stage. Another is that the insight and work of a few outstanding individual researchers may lead to savings of time and/or resources of almost incredible magnitude.

The book covers both successes and failures, including the fascinating "ice-cube" aircraft carrier (given the singular code name of HABAKKUK). Winston Churchill had become taken with the possibility of defending North Atlantic shipping inexpensively by stretching a chain of floating synthetic iceberg airfields across the ocean. Their dimensions were to be approximately 2,000 x 300 feet, with a freeboard of 50 feet, hence weighing over two million tons each if hollow, about eight million tons if solid! Several Canadian research teams were set to work. One investigated the structural qualities of ice and of mixtures of ice and wood pulp, another studied refrigeration, a third propulsion, and so on. In the end the project was abandoned because calculations showed that there was no appreciable saving in this as against the conventional steel aircraft carrier.

Lesson number three: the problem should be made known to the research people in terms of the over-all mission. Thus, the problem to be presented should be that of providing protective coverage to North Atlantic shipping with land-based aircraft, rather than a bold directive to develop an aircraft carrier of ice. This book contains many other instances where competent scientific groups were more effective when shown the goals and permitted to select the best means for achieving them.—GEORGE CHERNOWITZ.

THE GREAT IRREGULAR

THE ESSENTIAL T. E. LAWRENCE. Selected with a Preface by David Garnett. E. P. Dutton and Company. 328 Pages; Index; $3.75.

The safety of Suez and India during World War I compelled the British to base an army in Egypt and Palestine against Germany's ally, Turkey, whose empire included all the Middle East. Several Arab factions rose to the opportunity for winning independence with the aid of this army, and contagious nationalism grew into open revolt. For over a year Sir Archibald Murray's army pecked at lower Palestine to no purpose, and though the Arab movement grew it lacked military direction.

Lawrence, because of his intimacy with Bedouin peoples acquired through long association with them on archaelogical missions, was detailed to the "Arab Bureau," established to capitalize on the revolt. British officers, conveying promises of independence after the war, were sent into the field as military advisers to the Arab forces. Lawrence was one of these. A keen military student, he recognized the Turks' predicament: they were distributed in an area greater than they could control effectively with scattered garrisons. He reasoned correctly that the conventional practice—of being superior at the critical point and moment of attack—then in vogue in Europe and producing only stalemate—was too costly, and contrary to Arab temperament.

By trading space for strength—jabbing and running instead of standing and slugging—and denying targets to the enemy, there was no need to destroy the Turkish army, but its ability to maintain itself.

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Their "mobility gave the Arabs strategical rather than tactical strength, since in Arabia range was more than force, space greater than power."

Allenby, newly arrived from the Western Front to spark the British effort, was won over. Harried at one point and then at another, their communications finally thoroughly disrupted by Lawrence and his Arabs, the Turkish forces collapsed following Allenby's offensive and pursuit of late 1917.

But at the peace table the Allies didn't come through, and Lawrence felt that he personally had betrayed the Arabs into winning a war that benefited others. Continually thrust into public attention by persons who persisted in associating with him a glamor he abhorred, Lawrence (a lieutenant colonel at war's end), after serving several years in official posts, sought escape from finger-pointing in the obscurity afforded by enlisted service under pseudonyms. This craving for solitude, he would explain, was gained from association with Bedouin peoples.

Lawrence's posthumous *Seven Pillars of Wisdom*, which relates his part in the Arab war (an abridged edition called *Revolt in the Desert* appeared in 1927), immediately established itself both as a guide to irregular warfare and as a literary classic. *The Mint*, describing British peacetime military life, has been suppressed and won't be released for years. Extracts from all these, and from his letters, his writings on archaeology and the classics, his literary criticisms and his contributions to RAF technology, are skillfully pieced together in *The Essentials of T. E. Lawrence* to give us an autobiography of this man who valued achievement above recognition.—N. J. A.

WHY BRITANNIA RULED THE WAVES

A SAILOR'S ODYSSEY: The Autobiography of Admiral of the Fleet Viscount Cunningham of Hyndhope. E. P. Dutton Co. 715 Pages; Illustrated; Index; $7.50.

Coming as it were, rather late to the post, the autobiography of Admiral of the Fleet Sir Andrew Cunningham is the latest entry in the growing list of high-level military memoirs. Late or not, this is one of the best that has been written. Tracing a naval career that began at the age of fourteen (1897), through three wars and the highest honors and positions a British admiral can attain, Cunningham writes with surprising candor, modesty and vigor.

Cunningham began his career in sailing ships. Except for a short tour of duty at the Admiralty in 1938-39 and his final three years as First Sea Lord, his entire service was afloat or as we say in the Army "with troops." Cunningham is the first to admit that this was not only his choice but the type of duty for which he was best suited.

Here is a man who was offensively minded. This is reflected often throughout his entire life. It resulted in much cajoling to get him ashore with a naval brigade fighting in the Boer war. It kept him happy and aggressive in his long duty with destroyers during and after World War I and carried right through his tremendous efforts in the Mediterranean during World War II. In his final accolade to Winston Churchill, whom he admired mightily and opposed frequently, he sums up his code very well when he says, "He [Churchill] was so pugnacious, so valiant, so filled with the spirit of offence, so unhesitant to risk if there was something to be gained, so ready to support anyone who took risks for some great object. He hated that hideous motto 'Safety First' which has always been anathema to me."

Some of this aggressive spirit is reflected in Cunningham's comments on the personalities with whom he had to deal during his career and particularly the allies during World War II. He had little use for our own Admiral King and says so several times. He felt that King underrated the British Navy, was rude and overbearing, and describes him in just so many words.

By and large, Admiral Cunningham thought highly of most of the American high command and this was particularly true of General Eisenhower. One passage between them illustrates the point but typifies even more the old school, traditionally British reserve in which Cunningham was brought up. Eisenhower showed him two letters, one from President Roosevelt and the other from Harry Hopkins. Both carried the salutation "Dear Ike." Eisenhower then said, "I never know how far to go with you Britishers but just how long will it be before you start calling me Ike?" To which Cunningham replied, "Just half a second provided you will call me Andrew in return."

Cunningham seems to be a speed and fire-power man and not too keen for all of the latest developments which have come into use on modern warcraft. An interesting comment points this up. Early in 1946, he had occasion to take a short trip in a new "battle" type destroyer. Here's his description of it. ". . . a fine enough ship which seemed to carry every mortal weapon and gadget except guns. I noted at the time that these 'battles' fill my worst expectations. An erection like the Castle Rock, Edinburgh is on the bridge. They call it a director, and all to control four guns firing a total broadside of about 200 pounds. We must get back to destroyers of reasonable size and well-gunned."

As can be expected, the naval struggle during the early days of World War II in the Mediterranean particularly, are recounted in detail and is perhaps the best part of the book. With our landings in North Africa, Cunningham became General Eisenhower's senior Naval Commander and from that part forward, the accounts deal with only those matters which were of direct concern to the Admiral. He goes astray occasionally and at least one time makes a slight bobble when he credits General Maxwell Taylor with the "Nuts" retort at Bastogne when actually the phrase made General McAuliffe famous.—R. F. C.

THE 99th IN EUROPE

BATTLE BABIES: The Story of the 99th Infantry Division in World War II. By Major General Walter E. Lauer. Military Press of Louisiana, 1951. 353 Pages; Illustrated; Maps; $6.00.

The 99th Division went into the line in November 1944 on a front that extended for 22 miles south from Hofen to Losheim in Belgium, north of the 106th Division. The Checkerboard, well trained and a proud, aggressive outfit, had been in combat only four days on that fateful 16 December. While half of its troops were attacking it was hit hard, outnumbered five to one. The German force attacking the 99th struck its right flank, but was stopped, slowed down, diverted, and thrown off schedule. Before extricating itself the 99th mauled seven of Rundstedt's divisions, inflicting eighteen casualties for each one of its own. Then it helped defend the north shoulder (the Hot Corner) of the Bulge. After licking its wounds during January 1945 it drove to the Rhine and on to Giessen with First Army, through the Ruhr Pocket in April. Joining Patton's Third Army in Bavaria, its final drive brought it to the Danube. It attacked almost continuously from 11 March to 2 May, when it halted at the Inn River. The 99th claims to have been the first infantry division of First Army to reach the Rhine, first complete division to cross it at Remagen, and to have established the initial bridgehead on German soil. It released over 243,000 Allied POW's, and during one drive alone captured over 42,000 enemy.

The narrative is related from the division commander's viewpoint, amplified by his footnote comments and those of various commanders in explanation of tactical actions, or statements by witnesses to individual acts.

From a manufacturing standpoint the book leaves much to be desired. Maps, while adequate in number, could stand a great deal of improvement; all are cloudy and some cannot be read. More care too could have been taken in selection of pictures and captioning them. Most appear to have been lifted from private albums, with typewritten captions still attached and expanded or contracted along with the sizing of the pictures. A military editor could have given a lift to the style of the text, especially in the spelling of personal and place names.—N. J. A.

TRIBUTE TO THE MARINES

HOLD BACK THE NIGHT. By Pat Frank. Philadelphia: J. B. Lippincott Company, 1952. 210 Pages; $3.00.

The awful loneliness of the infantry soldier in war is the main theme of Mr. Frank's new novel, although it is quite possible the author did not intend it that way. Frank, a former war correspondent in Italy in World War II, writes of Dog Company's march to the sea during the "attack in a different direction" of the 1st Marine Division. There were 126 men in Dog at the Changjin Reservoir; fourteen men made it to be greeted by the Army's 3d Division

at Hungnam. Flank guard for a force attacking in a different direction is not a healthy occupation.

In Captain Mackenzie and Sergeant Eklund, Frank offers us two professional fighters of the new type; thinking men who realize the big issues as well as the immediate ones, and who do not let the big issues dull their sense of duty. Eklund is not really a professional—he is an ex-Marine who came back for Korea service because he believed the fight was necessary.

From the standpoint of one who reads much military literature of all kinds, it is discouraging to note that the professional writer can (or does) make minor tactics clearer to the reader than any professional soldier. The method used to clean out snipers from a building, for instance, becomes a thrilling and logical process the way Frank tells it. The use of a diversionary attack to assist in canceling out a well-sited tank makes perfect sense to the layman reader in this book; we wonder if the recruit at the training center has it explained to him as well.

To get back to the story, Dog Company fights its way over the mountains in bitter cold and deep snow. Through errors and bad luck it loses men and transport, and worse, weapons. One lieutenant freezes his hands on purpose, and an enlisted man rapes a Korean woman. We still, despite these incidents, feel that the Marine Corps as a whole, and Dog Company as a unit, and Mackenzie and Eklund as individuals, are a helluva bunch of fighting men, and the nation is safe as long as we breed people like these.

The book is basically a tribute to the Marines, and especially the 1st Marine Division in Korea. Why the author could not have left it there, instead of dragging in cracks against National Guard generals and the Army in general, is beyond us. There's glory for all, and room for all. The 7th Division and the 3d Division did all right with what they had; it isn't necessary to low-rate them in favor of the Marines.

But it's still a good novel about Korea, and worse ones will surely come.—A. S.

GREAT WORLD WAR I BATTLES

THE U.S. ARMY IN THE WORLD WAR, 1917-1919. Volume 8: *St. Mihiel*. 325 Pages; Illustrated; $2.75. Volume 9: *Meuse-Argonne*. 598 Pages; Illustrated; $3.50. Edited by Office of the Chief of Military History, Department of the Army, 1951.

These volumes record our part in the Allied drive that ended World War I. Though St. Mihiel is covered in a separate volume, actually that action was a phase of the Meuse-Argonne offensive, our greatest battle of the war. When the Allies set out to reduce the salient the Germans by a previous push had created at St. Mihiel, the newly formed U.S. First Army was assigned the main task. It marked the first time during the war U.S. troops fought as an independent army under an American commander. Until then our divisions and corps were under French and British corps and army commanders. It was a huge army, the largest in our history—three U.S. and one French corps totaling four French and nine U.S. divisions numbering 550,000 American and 110,000 French troops. Later enough units were detached to form the Second Army.

The St. Mihiel attack began 12 September 1918. In two days all objectives were gained. The Argonne Forest came next, beginning 22 September, and there American troops defeated the best the German Army had. The Meuse-Argonne drive by twelve Allied armies rolled on, and by 6 November German resistance had collapsed.

For reasons already mentioned in these columns, none of the volumes of our World War I history provide a running account. But the original documents included, selected because of their significance, give a detailed picture of operations. They include battle plans, field orders of all commanders concerned, correspondence between various Allied headquarters, and top-level German documents that pertain to enemy operations. All volumes are illustrated with photographs and maps, but there are no indexes.—N. J.A.

READABLE JOB

MARINE AVIATION IN THE PHILIPPINES. By Major Charles W. Beggs, Jr., USMC. Historical Division, Headquarters, U.S. Marine Corps, 1951. 166 Pages; Illustrated; Maps; Index; $2.50.

This is the ninth in the excellent series of operational narratives of the Marine Corps in World War II, as thorough and readable a job as its predecessors. All during the Allied climb up the Solomons-New Guinea ladder, Marine aviation did its share in supporting landings, furnishing close air support, bombing, attacking bypassed islands, covering convoys, in addition to daily air combat. When the war moved to the Philippines, Marine air had run out of fighting. It offered its services to the AAF and was relegated to the monotonous task of bombing neutralized Japanese. To Marines this was "kicking a corpse around," wasteful of air power, and definitely not suited to Marine temperament. This war was no private fight, and Marine airmen meant to remain in it. The documented account of the deal they swung to get to the Philippines makes highly interesting reading. They turned out a sizable air force too; the 1st Marine Air Wing eventually controlled eight fighter, seven scout bombing, two air-warning, one bomber, and one night-fighter squadrons. (On the ground, 1,500-odd Marine artillerymen served with the Army.—N. J. A.

NAZI NAVAL STRATEGY

HITLER'S STRATEGY. By F. H. Hinsley. Cambridge University Press, 1951. 254 Pages; $3.75.

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on Naval Affairs, the testimony of German officials at Nuremberg, the extant minutes of contemporaneous joint staff conferences, and writings of military and naval leaders, he emphasizes the strategic as distinct from the operational.

He examines those morale, technical and political considerations that influenced Der Führer in the formulation of his plans for the high-level conduct of the war as a whole. If Dr. Hinsley gives more detailed attention to naval subjects and opinions than to others, it is because the captured naval records are the most important and complete set of German documents available. Though not basing his conclusions on the evidence presented by the naval records, his analyses do take the naval point of view. He gives as his reason the facts that the naval evidence is more relevant than any other and that sea power, especially Britain's sea power, influenced Hitler's strategical planning from the beginning. Included is an excellent tipped-in map of the several German plans of 1939-40, with their code names.—N. J.A.

TOP-NOTCH NAVAL HISTORY

HISTORY OF UNITED STATES NAVAL OPERATIONS IN WORLD WAR II. Vol. VII: Aleutians, Gilberts and Marshalls; June 1942-April 1944. By Rear Admiral Samuel Eliot Morison. Atlantic-Little, Brown and Company. 369 Pages; Illustrated; Maps; Index; $6.00.

The Aleutians might well have been called the Theater of Military Frustration. The Battle of the Komandorskie Islands in March 1943 was the only bright spot in the nine months of Arctic War. During that, a small American naval task group slugged it out for three and a half hours of daylight against a Jap force twice its size. The contestants searched each other out with naval gunfire at ranges of eight to twelve miles, without the intrusion of air power or submarines.

"It was a miniature fleet action of the sort that the Navy, after World War I, had expected to fight in 'The Next War,' with one important difference, that neither side did the other any great hurt."

Attu blooded the 7th Division. The action against Kiska was slightly ridiculous, and will probably be best remembered for the sarcastic ballad, "Tales of Kiska," which, in commemoration of the three or four mongrel dogs which held the island against the American might, had the following refrain:

"O here's to mighty ComNorPac
Whose kingdom lay at cold Adak,
Whose reign was known in fame for fog
And capture of two couple dog!"

Morison launches swiftly into the main portions of the book: the massive amphibious operations organized by Admiral Nimitz against the Gilbert and Marshall islands. One of the most fascinating chapters in this section is the one dealing with the logistics of the Pacific operations. Logistic problems in the Pacific were so vast and so novel that the story of how they were solved is of surpassing interest.

Makin and Tarawa are dealt with at length. Morison is forthright in stressing the strategic importance of the Gilberts, and he takes sharp issue with General Holland Smith, who in his book declared that we could well have leapfrogged the Gilberts and gone right into Kwajalein. Morison believes that if this had been done, the Kwajalein assault force "would have been annihilated. The relatively easy conquest of Kwajalein . . . was due to the lessons learned at Tarawa."

The capture of the Kwajalein Atoll was one of the most complicated amphibious campaigns in all history, involving landings on some thirty different islets, fights on at least ten of them, and prolonged bloody battles on four—all within a week. "The tactics used at Kwajalein proved a willingness to learn on the part of the Army, Navy and Marine high commands. Seldom has military thinking been so agile and open to suggestion, so eager to grasp any new idea which sounded reasonable. How promptly were the hard lessons learned at Tarawa put into practice!"

This seventh volume in Morison's projected fourteen-volume history of U.S. Naval Operations in World War II finds the Admiral cruising comfortably at the halfway mark. Apart from the clarity and the thoroughness of his work, one further thing sets him apart from the general run of naval historians: His insistence on giving almost as much information about the planning and logistics of an operation as about the tactical details of the operation itself. This habit rounds off in admirable fashion the full picture, and sets the correct perspective. This series is top-notch military history.—R. G. McC.

BOOKS RECEIVED

DANGER SPOT OF EUROPE. By Alan Houghton Brodrick. Philosophical Library, Inc. 192 Pages; Index; $3.75.

INCREDIBLE NEW YORK. By Lloyd Morris. Random House. 370 Pages; Illustrated; Index; $5.00. A history of our largest city.

GOVERNMENTAL ADMINISTRATION. By James C. Charlesworth. Harper & Brothers. 713 Pages; Index; $6.00. A basic text in public administration.

LEGEND INTO HISTORY: The Custer Mystery. By Charles Kuhlman. The Stackpole Company. 250 Pages; Illustrated; Index; $5.00.

ONE MOMENT WITH GOD. By Edward L. R. Elson. Doubleday & Company, Inc. 192 Pages; $1.25.

THE SEIZURE OF TINIAN. By Major Carl W. Hoffman, USMC. Historical Division, Headquarters, U. S. Marine Corps. 169 Pages; Illustrated; Maps; Index; $2.50. Another in the series of official Marine Corps monographs.

LESSONS OF THE BRITISH WAR ECONOMY. Edited by D. N. Chester. Cambridge University Press. 260 Pages; Index; $4.50.

HOOSIER CARAVAN. Edited by R. E. Banta. Indiana University Press. 500 Pages; $5.00. An anthology of Indiana writers.

"KNOW YOUR GEORGIA." By C. J. Holleran. Tupper and Love, Inc. 94 Pages; Illustrated; $1.50.

TYPES OF RELIGIOUS PHILOSOPHY, Revised Edition. By Edwin A. Burtt. Harper & Brothers. 468 Pages; Index; $4.50.

FIFTY YEARS OF POPULAR MECHANICS, 1902-1952. Simon and Schuster. 308 Pages; Illustrated; $5.00. "An album of American progress containing articles, predictions, pictures and inventions that have appeared since the first issue of *Popular Mechanics*."

A FOREIGN POLICY FOR AMERICANS. By Robert A. Taft. Doubleday & Company, Inc. 127 Pages; $2.00.

HELICOPTER ANALYSIS. By Alexander A. Nikolsky. John Wiley & Sons, Inc. 340 Pages; Index; $7.50. A summing up of helicopter theory.

LIVING AND PLANNING YOUR LIFE. By N. William Newsom, Harl R. Douglass, and Harry L. Dotson. Harper & Brothers. 470 Pages; Illustrated; Index; $3.48. A text for high school guidance classes.

HUMAN FACTORS IN MANAGEMENT, Revised Edition. Edited by Schuyler Dean Hoslett. Harper & Brothers. 327 Pages; $4.00. A revision of the 1946 text.

YOUR DIABETES: A Manual for the Patient. By Herbert Pollack, M.D. and Mary V. Krause, M.S. Paul B. Hoeber, Inc., Medical Department of Harper & Brothers. 212 Pages; Index; $3.00.

FREEDOM IS THE RIGHT TO CHOOSE: An Inquiry into the Battle for the American Future. By Archibald MacLeish. The Beacon Press. 186 Pages; Index; $2.50.

NEGOTIATING WITH THE RUSSIANS. Edited by Raymond Dennett and Joseph E. Johnson. World Peace Foundation. 310 Pages; Index: $3.50.

ONE GREAT PRISON: The Story Behind Russia's Unreleased POW's. By Helmut M. Fehling. The Beacon Press. 175 Pages; Index; $2.75. "A documented refutation of the official Russian statement that its war prisoners had been returned."

THE RUSSIAN-AMERICAN COMPANY. By S. B. Okun. Edited, with introduction, by B. D. Grekov. Translated by Carl Ginsburg. Harvard University Press. 311 Pages; Index; $4.50. One-half the history of Alaska.

SPINOZA DICTIONARY. Edited by Dagobert D. Runes. Philosophical Library, Inc., 309 Pages; $5.00.

AIR TRANSPORTATION MANAGEMENT: Its Practices and Policies. By Joseph L. Nicholson. John Wiley & Sons, Inc. 446 Pages; Index; $6.50.

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